# Job calling: Testing the effects on engagement and health in the South African Police Service

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## DECLARATION

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## ABSTRACT

Literature related to the South African Police Service (SAPS) consistently highlights the negative aspects of SAPS work environments and the resultant adverse impact on workers' well-being. More specifically, research evidence regarding the police shows an increase in reported cases of illness, posttraumatic stress, medical boarding, burnout, substance abuse and suicide as well as a decrease in the level of job satisfaction and performance, compared to the norms of the general population (Swanepoel & Pienaar, 2004). Furthermore, it has also been articulated in national and international research that police work entails a substantial amount of risk and difficulty, and when compared with other occupations, police work has been described as particularly stressful.

However, Bakker and Demerouti (2014) report that some employees, regardless of high job demands, do not develop occupational health issues but seem to cope better than others under highly demanding and stressful work conditions. To build on these findings, the present study took a detailed look at factors affecting the well-being of employees of the SAPS. More specifically, seeing that limited research has been conducted on calling as a construct and its effects as a personal resource on employee engagement and occupational health in the SAPS, the following research-initiating questions were asked:

a. How has calling been defined and measured in the workplace?
b. How does calling network with other variables to influence engagement and occupational health in the workplace?
c. What is the effect of calling on engagement and occupational health in the workplace?

The job demands-resources (JD-R) model (Bakker & Demerouti, 2014) was used as a framework to investigate these research-initiating questions in the Western Cape and Northern Cape SAPS.

The primary objective of this study was to develop and empirically test a calling structural model, derived from the theory, which would explain the antecedents of variance in work engagement and occupational health. The antecedents comprised

job characteristics (as a job resource), calling (as employees' personal resources) and job demands present in the SAPS environment.

An *ex post facto* correlational design was used to test the formulated hypotheses. Quantitative data was collected from 339 SAPS employees by means of nonprobability convenience sampling. A self-administered hard-copy survey as well as an online version of the survey was distributed to police stations and offices in the Western Cape, while only the online version of the survey was distributed to the police stations and offices in the Northern Cape. This took place after formal permission had been received from the SAPS to conduct the research and ethical clearance had been received from Stellenbosch University, and given that the SAPS employees had agreed to participate in the research study.

The measuring instruments consisted of 1) the Utrecht Work Engagement Scale (UWES-17) (Schaufeli & Bakker, 2003); 2) the General Health Questionnaire (GHQ-28) (Goldberg & Hillier, 1979); 3) the revised Job Diagnostic Survey (JDS) (Boonzaier, Ficker & Rust, 2001); 4) the 12-item calling scale (Dobrow & Tosti-Kharas, 2011); and 5) the Police Stress Inventory (PSI) (Swanepoel & Pienaar, 2004). The data was analysed using item analyses and structural equation modelling, whereby partial least squares path analysis was conducted to determine the significance of the hypothesised relationships.

From the 11 hypotheses formulated in the study, seven were found to be significant. More specifically, hypotheses 1, 2, 3, 4, 5, 6 and 7 were all found to be statistically significant and therefore supported JD-R theory (Bakker & Demerouti, 2014), which postulates that job demands are generally the most important predictors of occupational health issues, whereas job resources and personal resources are generally the most important predictors of work engagement. Hypotheses 8, 9, 10 and 11 were found to be not significant; however, these hypotheses were related to the moderating effects.

Furthermore, it was also found during the interpretation of the final scores that employees of the SAPS were highly engaged in their work, experienced high levels of occupational health, had access to jobs equipped with a variety of job characteristics,

experienced high levels of calling and seemed to experience low levels of job demands.

The findings of the study shed light on the importance of developing and maintaining interventions that can foster job and personal resources in the pursuit of optimising work engagement and occupational health. In addition, the importance of calling as a personal resource was emphasised for employees of the SAPS to cope more effectively with their existing job demands, which cumulatively then results in a decrease in the employees' level of occupational health issues.

## OPSOMMING

Die literatuur oor die Suid-Afrikaanse Polisiediens (SAPD) beklemtoon konsekwent die negatiewe aspekte van die SAPD-werkomgewings en die gevolglike negatiewe impak op werkers se welsyn. Meer spesifiek dui navorsing oor die polisie daarop dat daar 'n toename in aangemelde gevalle van siekte, post-traumatiese stres, mediese ongeskiktheid vir werk, uitbranding, dwelmmisbruik en selfmoordgevalle is, sowel as 'n afname in die vlak van werksbevrediging en prestasie vergeleke met gevalle hiervan in die algemene bevolking (Swanepoel & Pienaar, 2004). Dit is verder in nasionale en internasionale navorsing uitgewys dat polisiewerk 'n hoë vlak van risiko en moeisaamheid behels en dat polisiewerk in vergelyking met ander beroepe as besonder stresvol beskryf word.

Bakker en Demerouti (2014) noem egter dat sommige werknemers, hoë werkseise ten spyt, nie beroepsgesondheidsprobleme ontwikkel nie, maar hierdie eise beter blyk te hanteer as baie ander individue in veeleisende en stresvolle werksomstandighede. Om verder te bou op hierdie bevindings het die huidige studie die faktore wat die welstand van SAPD-werknemers beïnvloed deeglik onder die loep geneem. Meer spesifiek, aangesien beperkte navorsing oor roeping as 'n konstruk onderneem is en oor die effekte daarvan as 'n persoonlike hulpbron in werknemerbetrokkenheid en beroepsgesondheid in die SAPD gedoen is, is die volgende navorsingsinisiërende vrae gevra:

a. Hoe word roeping in die werkplek gedefinieer en gemeet?
b. Hoe wisselwerk roeping met ander veranderlikes om betrokkenheid en beroepsgesondheid in die werkplek te beïnvloed?
c. Wat is die effek van roeping op betrokkenheid en beroepsgesondheid in die werkplek?

Die werkseise-hulpbronne-model (*job demands-resources* (JD-R) *model)* (Bakker & Demerouti, 2014) is as raamwerk gebruik om hierdie navorsingsinisiërende vrae in die Wes-Kaapse en Noord-Kaapse SAPD te ondersoek.

Die primêre doelwit van hierdie studie was om, op grond van die teorie, 'n strukturele model van roeping wat die antesedente van variansie in werksbetrokkenheid en

beroepsgesondheid verklaar, te ontwikkel en empiries te toets. Die antesedente behels werkskenmerke (as 'n werkshulpbron), roeping (as werknemers se persoonlike hulpbronne), en werkseise wat in die SAPD-omgewing teenwoordig is.

'n *Ex post facto*- korrelasionele ontwerp is gebruik om die geformuleerde hipoteses te toets. Kwantitatiewe data is deur middel van nie-waarskynlikheids-gerieflikheidsteekproefneming by 339 SAPD-werknemers versamel. 'n Selftoegediende vraelys op harde kopie is by polisiestasies en polisiekantore in die Wes-Kaap versprei, terwyl slegs die aanlyn weergawe by die polisiestasies en polisiekantore in die Noord-Kaap versprei is. Dit is gedoen nadat formele toestemming van die SAPD verkry is om die studie te onderneem, asook etiese goedkeuring vanaf die Universiteit Stellenbosch ontvang is, en gegewe dat die SAPD-werknemers toegestem het om aan die navorsing deel te neem.

Die meetinstrumente het bestaan uit 1) die *Utrecht Work Engagement Scale*-vraelys (UWES-17) (Schaufeli & Bakker, 2003); 2) die *General Health Questionnaire* (GHQ-28) (Goldberg & Hillier, 1979); 3) die *Revised Job Diagnostic survey* (RJDS) (Boonzaier, Ficker & Rust, 2001); 4) die Roepingskaal (Dobrow & Tosti-Kharas, 2011); en 5) die *Police Stress Inventory* (PSI) (Swanepoel & Pienaar, 2004). Die data is met behulp van itemanalises en Strukturele Vergelykingsmodellering (SEM) geanaliseer, waar PLS pad-ontleding onderneem is om die betekenisvolheid van die gehipoteseerde verhoudings te bepaal.

Van die 11 hipoteses wat in die studie geformuleer is, is sewe betekenisvol bevind. Meer spesifiek is hipoteses 1, 2, 3, 4, 5, 6 en 7 almal statisties betekenisvol bevind, wat beteken dat hierdie hipoteses JD-R-teorie ondersteun (Bakker & Demerouti, 2014). Hierdie teorie postuleer dat werkseise oor die algemeen die belangrikste voorspellers is van beroepsgesondheidsprobleme, terwyl werkshulpbronne en persoonlike hulpbronne oor die algemeen die belangrikste voorspellers van werksbetrokkenheid is. Hipoteses 8, 9, 10 en 11 is nie betekenisvol bevind nie; hierdie hipoteses hou egter verband met die matigende effekte.

Daar is verder tydens die interpretasie van die finale tellings gevind dat SAPD-werknemers hoogs betrokke by hulle werk is, hoë vlakke van beroepsgesondheid

ervaar, toegang het tot werk wat toegerus is met ’n verskeidenheid werkskenmerke, hoë vlakke van roeping ervaar en blyk om lae vlakke van werkseise te ervaar.

Die bevindings van die studie werp lig op die belangrikheid van die ontwikkeling en onderhouding van ingrypings wat werks- en persoonlike hulpbronne in die nastrewing van die optimering van werksbegeestering en beroepsgesondheid bevorder. Daarbenewens is die belangrikheid van roeping vir SAPD-werknemers benadruk sodat hulle hul huidige werkseise meer doeltreffend kan hanteer, wat dan kumulatief ’n afname in werknemers se vlak van beroepsgesondheidsprobleme sal veroorsaak.

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# CHAPTER 1

# BACKGROUND TO THE STUDY

## 1.1 INTRODUCTION

With the socioeconomic and political turmoil of the last 30 years, in conjunction with changes as a result of the dissolution of apartheid, it comes as no surprise that police work is regarded as particularly stressful in South Africa. Statistics regarding continuous exposure to violence, retirement as a result of stress-related psychological disorders and the high suicide rate in the South African Police Service (SAPS) all serve as indications that police officers experience their working conditions as extremely stressful and traumatic (Pienaar & Rothmann, 2006). Consequently, exposure to police work can result in ill-health and demotivation among these officials.

More specifically, research on the police has consistently highlighted an increase in reported cases of illness, posttraumatic stress, medical boarding, burnout, substance abuse and suicide as well as decreases in the level of job satisfaction and performance compared to the norms of the general population (Swanepoel & Pienaar, 2004). Furthermore, it has also been articulated in national and international research that police work entails a substantial amount of risk and difficulty and, in comparison to other occupations, police work has been described as particularly stressful, which also seem to be the case in the SAPS.

According to the Annual Report of the Department of Police (2014), the 2013 annual turnover rate for the SAPS was reported as 1.8% on average. Of this, the highest turnover percentage, 6.3%, could be found in top management. Furthermore, there were only 987 recruitments in 2013, compared to 3 588 employees who terminated their service in the SAPS in the same time. The reasons that were given for the termination of service included resignation (45.9%), retirement (22.7%), death (18.9%), discharge due to illness (7.7%), dismissal due to misconduct (3.5%) and expiry of contract (.9%) (Department of Police, 2014). What becomes alarming is the fact that death and discharge due to illness are among the reasons given by employees. Furthermore, the main types of illness that resulted in ill-health retirement were reported by employees as psychological and medical conditions.

Not only are the turnover rates for 2013 problematic, but the amount of sick leave utilised by SAPS employees was also identified as problematic. The percentage of employees using sick leave was recorded as 51.4% for skilled workers, 36.4% for highly skilled production workers, 9.2% for highly skilled supervision, 2.6% for lower skilled employees and .3% for senior management. The average number of sick leave days was reported as 10 (Department of Police, 2014).

Furthermore, the incapacity leave for 2013 was reported to be 58 days on average. The highest incapacity percentages were again reported by the highly skilled production employees (53.3%) and the skilled employees (28.7%). Incapacity leave can either be short or long term and, according to the Annual Report (Department of Police, 2014), 4 047 of the reported cases were short term, while 1 248 were reported to be long-term incapacity cases.

It can be concluded from the statistics provided that, on average, the general health of SAPS employees seems poor, and serious attention should be given to this matter. Factors that contribute to stress and other health issues in police work include not only the tough physical demands and life-threatening situations but also the fact that economic, social and technical changes are transforming societal expectations, which consequently can add to the work demands of police officers. While organisational and operational factors both seem to contribute to police stress, organisational factors have been identified as the strongest police stressors.

Organisational stressors include interdepartmental practices (e.g. authoritarian structure; lack of participation in decision making, which directly influences the accomplishment of daily tasks; punishment-centred managerial philosophy; unfair discipline; and lack of administrative support), while operational stressors include job-specific factors (e.g. shift work, danger, public apathy, boredom and contending with suffering and death). The police often face stressful and potentially harmful events, including stopping, confronting and arresting lawbreakers and often dangerous people. Furthermore, it has also been identified that officers face what they perceive as unfair workplace treatment, such as forced overtime, completing paperwork off the clock and a general lack of support (Russell, Cole & Jones, 2014).

Consequently, the aforementioned factors result in more stress-related complaints among police officers in comparison with workers in other professions. Police officers also suffer more illness, absenteeism, burnout and premature retirement as a result of these stress-related problems. Compared to the general population, police officers also face increased rates of heart disease, stomach disorders, alcohol and drug abuse, divorce and suicide due to ineffective coping with stress. Ineffective coping with stress thus negatively influences the individual well-being of police officers and their organisational performance (Russel et al., 2014). Therefore, it is important that the SAPS be provided with effective coping mechanisms to ensure a healthy police force, which in turn will result in a more stable economy with growth potential (Mostert & Rothmann, 2006).

## 1.2 RELEVANCE OF THE STUDY

Many studies have indicated that job characteristics can have a significant impact on employee well-being (e.g. on the job strain, burnout and work engagement that employees experience). For example, research has revealed that job demands, which may include high work pressure, emotional demands and role ambiguity, may result in sleeping problems, exhaustion and ill health. In contrast, however, job resources, such as social support, performance feedback and autonomy, may result in the initiation of a motivational process that well may lead to job-related learning, work engagement and organisational commitment (Bakker & Demerouti, 2007).

Recently it also has been determined that although extensive research has been conducted within the diagnostic paradigm with regard to job demands, resources and burnout, there is a need for research from the positive psychology paradigm and on personal resources as drivers of work engagement. This trend of positive psychology emphasises a focus on the strengths, capacities and skills of employees rather than on their shortcomings (Nell, 2015). Consequently, the focus should be on developing SAPS employees based on their existing strengths, capacities and skills rather than focusing only on the deficits within the SAPS. Hence, it is important that a clear understanding of what the positive psychology paradigm entails be formulated.

### 1.2.1 The field of positive psychology

The field of positive psychology shifts the focus of determining how employee well-being is evaluated. Instead of focusing on dysfunctional mental illness, positive psychology strives to promote mental health. Furthermore, there is an increased focus on building human strength as opposed to human weakness. Positive psychology also strives to create good lives and healthy people instead of focusing on healing psychologically stressed people, and the last shift includes building the potential in people rather than focusing on repairing the worst. Thus, the focus here is on promoting employee well-being by implementing a more positive approach (Goetzel et al., 2014).

Positive psychology mainly aims to establish a culture of health and wellness in organisations (i.e. a culture that enables employees and organisations to make healthy lifestyle choices). A meta-analysis has indicated that such a culture results in a 25% reduction in medical and absenteeism expenditure (Goetzel et al., 2014). Robust evidence also exists that positive psychology interventions effectively enhance well-being while they also ameliorate depression (Proyer, Wellenzohn, Gander & Ruch, 2014). Another study determined that positive organisational constructs appear to be associated with reduced rates of serious adverse health outcomes and improved health status among heart patients (DuBois et al., 2015). The emergence of positive psychology also has resulted in a wider array of factors that can now be used to moderate the negative effects of work on mental health and therefore seem crucial in today's work environment (Page et al., 2014).

### 1.2.2 Positive organisational scholarship

Positive organisational scholarship (POS), as a branch of positive psychology, broadens the focus of psychology and strives to explain the phenomenon of why certain individuals, groups and organisations live by positive states of mind (Cameron, Mora, Leutscher & Calarco, 2011). POS consists of several assumptions that provide guidelines when engaging with this field. Firstly, the creation of thriving at work will not be promoted by merely eliminating factors that cause stress. Secondly, POS re-emphasises beneficial outcomes with reference to well-being, citizenship and health, to name but a few. Thirdly, according to the POS field, there are three life-giving engines that organisations need: positive emotion, positive meaning and positive

connections. POS thus strives to amplify the positive in order to counteract the tendency of humans to emphasise negative aspects (Alessandri et al., 2012).

The field of positive psychology, under which POS is categorised, opens up several possibilities for career research (Alessandri et al., 2012). POS invites researchers of careers to consider the dynamics and antecedents that result in positive career-relevant outcomes within an organisation. Here several questions emerge and can include the following:

a. What enables people to experience their job as a calling?
b. What contributes to episodes of career thriving?
c. When can work and family responsibilities contribute to the enrichment rather than depletion of individuals within an organisation? (Cameron et al., 2011).

### 1.2.3 The investigation of calling as personal resource and its relevance

Calling, as part of POS research, serves as a relevant construct within individuals across age cohorts, religious affiliations and employment levels (Duffy, Bott, Allan, Torrey & Dik, 2012). A large-scale study found that 40% of college students reported having a calling, whereas 40% were in search of one (Duffy, Bott et al., 2012). Another study, on 9 803 employed adults originating from more than 70 countries, found that approximately 30% reportedly had a calling (Duffy, Bott et al., 2012). It was also determined that employees viewing their job as a calling were situated in vastly diverse occupations, which included administrative assistants, physicians, zookeepers, computer programmers and administrators (Duffy, Bott et al., 2012). Thus, calling seems to be endorsed by a substantial percentage of individuals across diverse population groups, supporting the notion to explore calling in greater depth (Duffy et al., 2012).

Most research on the concept of calling focuses on the linkage between having a calling and the impact thereof on career development outcomes (Duffy, Autin, Allan & Douglass, 2014). College students endorsing a calling, for example, have demonstrated greater career maturity, work hope, self-efficacy in career decision making and academic satisfaction. Furthermore, the meanings that individuals attribute to their work, such as their beliefs about its purpose or what it achieves, are typically assumed to influence important work-related outcomes such as job

performance, job satisfaction, organisational citizenship behaviour and well-being (Duffy, Autin et al., 2014). It has also been reported that the favourable work outcomes of called individuals include aspects such as career commitment, job satisfaction, organisational commitment, lower withdrawal intentions and work meaning (Duffy, Dik & Steger, 2011). Moreover, calling has been reported to correlate negatively with avoidance coping, emotion-focused coping, stress and depression (Duffy, Allan, Bott & Dik, 2014).

Consequently, studying calling seems rather relevant and advantageous in today's working environment, and it seems that having called individuals within the SAPS may result in lower turnover rates, increased general health and more effective coping with stress, which seem to be the main problems in this organisation. Calling, however, should not be seen as the only solution to the current issues within the SAPS, and therefore other possibilities were also identified in this study.

## 1.3 THE RESEARCH-INITIATING QUESTIONS

It is important to determine whether being engaged in one's calling necessarily contributes to excellence or effectiveness (Elangovan, Pinder & McLean, 2010). Alternatively, should a called individual be successful or effective in order to qualify as having a calling? Another issue that needs attention is the distinction between individuals having a calling versus living that calling (Duffy, Allan, Autin & Bott, 2012). Theory suggests that certain barriers may contribute to preventing called individuals from living out their calling. These may include barriers on the societal, workplace and individual levels (Duffy, Allan et al., 2012).

It also should be considered whether it is possible for individuals to hold more than one calling, either simultaneously or in sequence (Elangovan et al., 2010). The reason for this is to determine the relevance of having more than one calling and the impact thereof on those individuals. Another line of research on calling could include determining the cultural context in which callings can emerge (Elangovan et al., 2010). This will ensure a better understanding of how called individuals differ or relate with regard to certain aspects of calling – is the search for identity, meaning and sense seen as equal across cultures? Deriving from this, it also needs to be determined what leads to the discovery of a calling (Duffy & Sedlacek, 2007).

When it has been determined that an individual has a calling, what benefits are associated with these individuals within the workplace? In other words, what can called employees contribute to an organisation such as the SAPS in comparison to other employees who only view their occupation as a job or career? The burning question then becomes how calling networks with traditional study variables in industrial psychology to promote higher performance, engagement, occupational health and success within an organisation such as the SAPS and how these interactional effects can be measured within such an organisation (Dobrow & Tosti-Kharas, 2011).

When considering the concept of calling, a number of questions can be derived. This seems another important reason for studying calling. These questions, in turn, contributed to the formulation of the research-initiating questions that formed the basis of this study:

a. How has calling been defined and measured in the workplace?
b. How does calling network with other variables to influence engagement and occupational health in the workplace?
c. What is the effect of calling on engagement and occupational health in the workplace?

## 1.4 RESEARCH AIM AND OBJECTIVES

The purpose of this study in essence was to answer the abovementioned research-initiating questions. Therefore, the study firstly attempted to define calling and to determine how it is measured. Secondly, it investigated how calling networks with other variables in order to influence engagement and occupational health in the workplace. Lastly, the study aimed to determine the effect of calling on engagement and occupational health in the workplace. The resolution of issues was dependent on the degree to which the research problems were addressed.

These research problems were established earlier in the form of questions that researchers came across during the launch of their studies. The goals of this study, in conclusion, included the following:

a. to define calling and show how it is measured;

b. to indicate how calling interacts with other variables in order to influence engagement and occupational health at work;
c. to indicate the effect of calling on engagement and occupational health at work; and
d. to test a calling structural model in the workplace.

## 1.5 IMPORTANCE AND CONTRIBUTIONS OF THE STUDY

The study aimed to follow a positivistic approach, focusing on positive work-related outcomes that promote employee health and well-being. Furthermore, the study also contributes to the literature on work engagement, occupational health, job resources, calling and job demands in the sense that it tested the job demands-resources (JD-R) model in one research inquiry, as opposed to the norm of researchers tending to focus only on certain parts of the model.

Moreover, the study investigated paths within the model that, to date, have received little focus and therefore limited evidence to support their inclusion. Lastly, the study investigated the condition of work engagement and occupational health among SAPS employees in the Western Cape and Northern Cape with the goal of providing relevant and implementable interventions to address and improve work engagement and occupational health problems.

## 1.6 CHAPTER OUTLINE

Chapter 1 provides the focus of the study by illustrating the current situation within the SAPS and showing that the JD-R model was used from a positive psychology approach, seeing that it is the new trend in modern society. The relevance of the research, especially within the SAPS, is also discussed and the research objectives are outlined.

Chapter 2 comprises an in-depth literature review to satisfy the theoretical objective of the study. Each of the latent variables of interest is defined, explained and discussed in terms of the existing academic literature. The relationships between these variables of interest are explored, and a theoretical model is developed to graphically portray the theorised relationships.

In Chapter 3 the methodology of this study is presented. The substantive research hypotheses are outlined and the structural model is presented. This is followed by a discussion of the research design, research participants, measuring instruments, missing values, statistical analyses and research ethics.

The results derived from the statistical analyses are reported and discussed in Chapter 4. The reporting of the results is done in the following order: item analysis and partial least squares (PLS) analysis. The participant scores are discussed, and the hypotheses are interpreted.

Lastly, managerial implications are highlighted in Chapter 5, along with a discussion of practical interventions. In addition, the limitations of this research study and recommendations for future research endeavours are outlined.

# CHAPTER 2

# LITERATURE STUDY

## 2.1 INTRODUCTION

The purpose of this chapter is twofold. Firstly, the literature review investigates and elaborates on the relevant constructs of interest, commencing with a short overview of previous job stress models from the occupational health and well-being literature. It was identified that SAPS employees have poor occupational health and work in high-stress environments, and therefore it seems relevant to investigate different methods and models to describe the origin of these problems. Secondly, the constructs of interest are theoretically defined and explained. The relationships between the constructs of interest are explained, followed by the statement of the hypotheses. The chapter is concluded with a diagram of a conceptual model.

The literature study therefore focuses on a review of past studies by other researchers to provide the foundational background and basis for this research study. It lays out the theories supporting the research study and serves as a guideline for the development of the theoretical framework and hypotheses.

## 2.2 PREVIOUS JOB STRESS MODELS

Although there are various models that describe the origin of stress and health, it is interesting to note that the early models of job stress and motivation ignored each other's literature (Bakker & Demerouti, 2014). These early models include 1) the two-factor theory (Herzberg, 1968); 2) the demand-control model (Karasek, 1979); 3) the effort-reward imbalance model (Siegrist, 1996); 4) the job characteristics model (Hackman & Oldham, 1976); and 5) the conservation of resources model (Hobfoll, as cited in Grandey & Cropanzano, 1999). The assumptions regarding the origin of stress and health and possible limitations of each model will now be discussed.

### 2.2.1 The two-factor theory

Herzberg's two-factor theory implies that two independent sets of circumstances drive employee satisfaction and motivation. These two sets of circumstances are hygiene factors and motivator factors. According to this theory, employees are unsatisfied if

hygiene factors (also known as dissatisfiers) are absent, whereas the availability of motivator factors (also known as satisfiers) leads to employees feeling satisfied with their jobs (Bakker & Demerouti, 2014; Sambhanthan & Good, n.d.).

According to findings from the research conducted by Herzberg on engineers and accountants, hygiene factors include company policies, supervision, salary, interpersonal relations and working conditions. In contrast, the motivator factors were identified as achievement, recognition, nature of work, responsibility and advancement, all of which presumably promote satisfaction. It is believed that even if hygiene factors should be increased, this will not result in higher levels of satisfaction but a lack of one or more of these hygiene factors will result in dissatisfaction. Furthermore, according to the two-factor theory, employees will perform their job as required, with no extra effort, if motivator factors are absent. In contrast, employees will increase their effort and exceed the minimum requirements if motivator factors should be supplied (Bakker & Demerouti, 2014).

However, research on the validity of distinguishing between hygiene and motivator factors has questioned the existence of this theory. Criticism of the two-factor theory mainly includes the following: evidence for this theory depends on the method used, and the model receives limited support for the prediction of job satisfaction. However, Herzberg contributed significantly to motivational and job satisfaction research by making others aware of the importance of job enrichment (the enlargement, enrichment and redesigning of jobs) in attempting to increase employee motivation and job satisfaction (Bakker & Demerouti, 2014).

### 2.2.2 The demand-control model

Karasek's (1979) demand-control model also focuses on two sets of circumstances that drive satisfaction and motivation, just like Herzberg's two-factor theory. However, instead of hygiene and motivator factors, the demand-control model focuses on two psychosocial job characteristics that interact with one another: job demands and job control. Job demands refer to aspects related to a specific job and work context that requires increased levels of energy to complete job tasks (Karasek, 1979). In contrast, job control refers to the degree to which individuals can determine how they want to meet the demands set by their jobs. Job control ultimately represents an employee's

degree of decision latitude (Bakker, Van Veldhoven & Xanthopoulou, 2010), which refers to job autonomy as it is known today.

This model includes a central hypothesis that different combinations of job demands and job control will result in either healthy or unhealthy employees (Mark & Smith, 2008). It is proposed that strain is highest in highly demanding jobs with low control (i.e. high-strain jobs). In contrast, highly demanding jobs combined with high control will result in task enjoyment, learning and personal growth (i.e. active-learning jobs). Like the job characteristics model, the demand-control model has been awarded a prominent position in the literature, although empirical evidence seems mixed (Bakker & Demerouti, 2014; Mark & Smith, 2008).

According to research, the demand-control model was expanded to include social support as buffer in situations with high job demands. However, despite the inclusion of social support, the model is still limited in the amount of job characteristics that it considers and consequently fails to reflect the highly dynamic multi-stressor nature of the work environment. Furthermore, this model neglects to take individual differences into account when evaluating susceptibility to stressors while being unable to provide explanations for why some individuals exposed to the same level of job demands and job control show different behavioural or health outcomes (Mark & Smith, 2008).

### 2.2.3 The effort-reward imbalance model

In contrast to the demand-control model, Siegrist's (1996) effort-reward imbalance model emphasises the reward instead of the control structure of work. This model is based on the assumption that job stress is the result of an imbalance between the effort that individuals put in and the reward received for it. This reciprocity between effort and reward will result in arousal and stress, which in turn may lead to stress reactions such as cardiovascular risk. This combination of high effort and low rewards has indeed been found to contribute to deteriorating cardiovascular health, subjective health complaints, mild psychiatric disorders and even burnout (Bakker & Demerouti, 2014; Mark & Smith, 2008).

Furthermore, the effort-reward imbalance model includes a personal component (viz. overcommitment). According to this model, overcommitment as a personal component

can moderate the relationship between effort-reward imbalance and employee well-being. Overcommitment refers to attitudes, behaviours and emotions that reflect an excessive striving and a strong desire for approval and esteem. Thus, there is evidence that personality can also influence the interaction between effort and reward (Bakker & Demerouti, 2014).

### 2.2.4 The job characteristics model

Hackman and Oldham's (1976) job characteristics model also examines individual responses to jobs (e.g. satisfaction, absenteeism and turnover) but as a result of specific job characteristics and the moderating effect of individual characteristics. The core job characteristics include skill variety (variety of skills used at work), task significance (impact of work on the lives or work of others), task identity (opportunity to complete an entire significant piece of work), feedback (information provided regarding the effectiveness of job performance) and autonomy (degree of freedom, independence and discretion that a job provides). It is believed that these core job characteristics result in motivation and satisfaction through the attainment of three critical psychological states: experiencing one's work as meaningful, experiencing responsibility for outcomes and having knowledge of the results of work activities (Bakker & Demerouti, 2014; Lunenburg, 2011).

Experiencing meaningfulness at work can be defined as the degree to which the individual experiences the job as generally meaningful, valuable and worthwhile (Boonzaier & Boonzaier, 1994). The second psychological state, that of experiencing responsibility for work outcomes, involves the degree to which the individual feels personally responsible and accountable for the results of his/her work. Knowledge of results, the third psychological state, refers to the degree to which individuals continuously understand and know how effectively they are performing the job (Boonzaier & Boonzaier, 1994).

According to the model, jobs must contain skill variety, task identity and task significance in order for individuals to experience meaningfulness (Boonzaier et al., 2001). If jobs contain autonomy to a significant degree, individuals will experience responsibility for their work outcomes. In order for individuals to have knowledge of

the results of their work activities, feedback should be given to employees on a regular basis.

The job characteristics model also specifies the existence of moderator variables, which include growth-need strength, satisfaction with pay, satisfaction with security, satisfaction with co-workers, satisfaction with supervisors, and knowledge and skills (Boonzaier et al., 2001). Growth-need strength refers to individuals' needs for personal accomplishment, learning and developing themselves beyond their present position. Pay satisfaction is defined as the degree of satisfaction with basic compensation and benefits, and the extent to which the organisation's compensation relates to the individual's contribution to the organisation (Boonzaier et al., 2001). Security satisfaction is the degree of satisfaction with the general security experienced and the prospects thereof. Co-worker satisfaction refers to the degree to which individuals are satisfied with other individuals with whom contact is made in the work situation as well as opportunities to come to know these individuals. Supervision satisfaction refers to the degree of satisfaction with the treatment, support and guidance that supervisors provide as well as the degree to which individuals seem satisfied with the general quality of supervision. Knowledge and skills are included as moderator variables and are not specifically defined, due to being unique to particular work settings (Boonzaier et al., 2001).

However, most research has excluded these psychological states and has focused mostly only on the direct impact of the job characteristics on the outcomes. It has been determined that the relationship between job characteristics and core psychological states as well as the relationship between core psychological states and outcomes seems stronger in individuals with a growth-need strength. However, evidence for the latter hypothesis has been found to be inconsistent. It consequently can be concluded that several inconsistencies exist in the research evidence for some of the elements of the job characteristics model but that the model nonetheless has made relevant contributions (Bakker & Demerouti, 2014; Lunenburg, 2011).

### 2.2.5 The conservation of resources model

Hobfoll's (1989) conservation of resources model proposes that individuals seek to acquire and maintain resources (Grandey & Cropanzano, 1999). This model also

proposes that employees use job resources to deal with threatening circumstances and to protect themselves from negative outcomes by continuously attempting to accumulate surplus resources (Hobfoll, 1989). Consequently, employees not only wish to protect their current job resources but also attempt to accumulate more.

It is also argued by this model that resources tend to create more resources, resulting in 'resource caravans' that lead to positive work and personal outcomes, such as engagement, well-being and increased coping. Employees thus utilise one form of resources to develop another, which results in a positive-gain spiral (Halbesleben, Neveu, Paustian-Underdahl & Westman, 2014).

### 2.2.6 Summary of job stress models

Each of the abovementioned models has contributed in a unique way to the development of the JD-R model. According to Bakker and Demerouti (2014), these models were valuable in developing a foundation for the explanation of work-related health impairment and well-being. Table 2.1 summarises the unique contribution of each model discussed.

**Table 2.1**

***Major contributions of previous job stress models***

| Model | Contribution to the JD-R model |
|---|---|
| Two-factor theory | Two independent sets of circumstances drive employee satisfaction and motivation |
| Demands-control model | Job strain develops when demands exceed job control |
| Effort-rewards imbalance model | Inclusion of a personal component in stress models |
| Job characteristics model | Job characteristics are characterised as job demands or resources |
| Conservation of resources model | Develops the idea of resource caravans |

Empirical research fundamentally aims to continuously expand on older theories, address the shortcomings of existing theories and produce new knowledge. Although

the abovementioned models each contributed to the body of knowledge in the health-impairment and well-being literature, they failed to address certain issues.

Firstly, it can be concluded that each of these five models depicts a one-sided approach that either focuses on job stress or motivation. Secondly, all five of the discussed models are relatively simple and ignore the viewpoints of other models. Thirdly, it can also be concluded that each of these models seems static, which assumes that the specific variables included in the models hold across all work environments. Lastly, these models do not take the volatility of the nature of jobs into account (Bakker & Demerouti, 2014).

Although early models of stress and motivation have ignored each other's literatures, these models have produced valuable insights into what influences employee well-being. However, it is evident that stress and motivation can occur simultaneously and therefore a model that combines both of these factors should be used. The applicable model should also have the capacity to address the one-sidedness, simplicity and static character of early models of stress and motivation while taking into account the changing nature of jobs (i.e. the JD-R model) (Bakker & Demerouti, 2014).

## 2.3 THE JOB DEMANDS-RESOURCES MODEL OF OCCUPATIONAL WELL-BEING

The JD-R model was first introduced in an attempt to understand the antecedents of burnout, and an early version of the JD-R model drew upon a meta-analysis in which eight job demands and thirteen job resources were identified as causal possibilities of burnout. Thus, the early JD-R model only focused on burnout and a health impairment process but was later revised to also include engagement as part of a motivational process within the model (Schaufeli & Taris, 2014).

The JD-R model has been used for a number of reasons, which include the prediction of job burnout, organisational commitment, work enjoyment, connectedness and work engagement (Bakker & Demerouti, 2014). In addition, the JD-R model also predicts the consequences of the aforementioned experiences, including sickness absenteeism and job performance. The JD-R model, as illustrated in Figure 2.1, has

been included in so many studies, new propositions and meta-analyses that it has maturated into a theory.

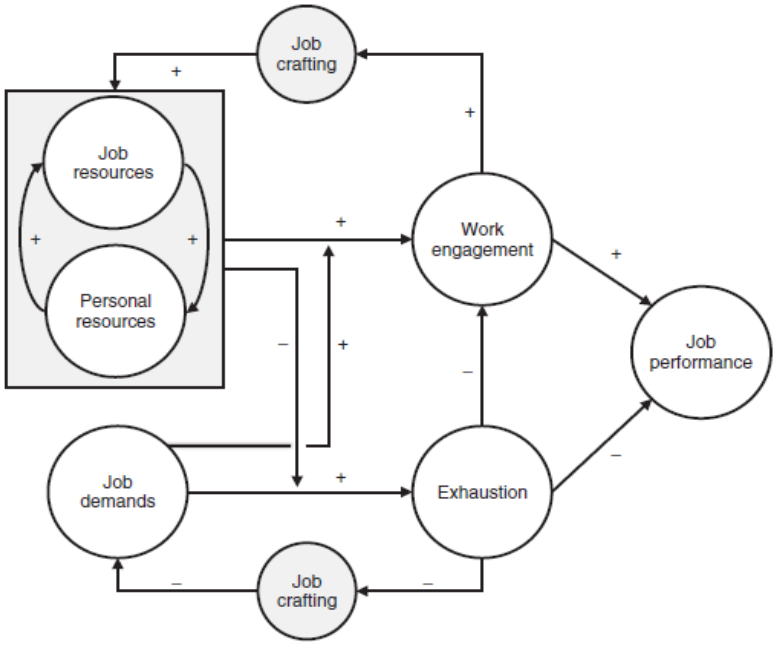


***Figure 2.1.*** **The job demands-resources model** (Bakker & Demerouti, 2014, p. 10)

JD-R theory can assist in predicting employee well-being and job performance. Due to its flexibility, JD-R theory has become increasingly popular. According to this theory, all working environments comprise two different categories: job demands and job resources (Bakker & Demerouti, 2007; 2014).

*Job demands* refer to the physical, psychological, social or organisational aspects of a job that require sustained physical and/or psychological effort. Examples of job demands include high work pressure and emotionally demanding interactions with clients, which may not necessarily be negative but may turn into hindrance demands when the efforts become too high on individuals' behalf. In contrast, *job resources* refer to those physical, psychological, social or organisational aspects of the job that are functional in achieving work goals, reducing job demands and stimulating personal growth, learning and development (Bakker & Demerouti, 2014). Consequently, JD-R theory can be applied and tailored to all working environments as it takes different definitions of what can be classified as job demands and job resources into account, depending on the type of job/organisation.

A second proposition of JD-R theory is that job demands and resources trigger two independent processes: a health-impairment process and a motivational process. According to JD-R theory, job demands are generally the most important predictors of the *health-impairment process*, which can include exhaustion, psychosomatic health complaints and repetitive strain injury, whereas job resources are predictors of the *motivational process*, which includes work enjoyment, motivation and engagement (Bakker & Demerouti, 2007; 2014).

The third proposition of JD-R theory refers to job demands and resources interacting to predict occupational well-being. This interaction can occur in two possible ways. The *first interaction* refers to job resources buffering the impact of job demands on strain (Bakker & Demerouti, 2008; 2014). Several studies have shown that job resources such as social support, performance feedback, autonomy and opportunities for development can reduce the impact of job demands. The *second interaction* takes place when job demands amplify the impact of job resources on motivation/engagement. Research has indicated that job resources become salient and have the strongest positive impact on work engagement when job demands seem high. When an individual is confronted with challenging job demands, the value of job resources should be fostered in order for the individual to become dedicated to the task at hand (Bakker & Demerouti, 2014).

The original JD-R model has also been expanded to include *personal resources* in both the model and the theory. Personal resources refer to positive self-evaluations that are linked to resilience and an individual's ability to control and influence his/her environment successfully (Bakker & Demerouti, 2014; Xanthopoulou, Bakker, Demerouti & Schaufeli, 2007). In this study, calling is the personal resource of interest.

In times of career transition – an example of which would be young people who leave high school for university or enter the workforce – career calling seems to be an important personal resource (Praskova, Hood & Creed, 2014). Career calling aids young people to successfully manage a career transition, develop their careers and achieve career success. Research on calling has indicated that young people with a

calling experience increased well-being and develop career-related behaviours and attitudes (Praskova et al., 2014).

In spite of not having a standard definition, career calling can be conceptualised within three categories: traditional, neotraditional and modern. Traditional career calling refers to it being religious or having originated from other external forces of calling, whereas neotraditional calling refers to a sense of destiny and prosocial duty. Modern calling, in contrast to the aforementioned categories, is an internal drive for happiness and self-fulfilment (Praskova et al., 2014). Scholars agree that called individuals consider their work as having deep meaning and approach it by emphasising a strong sense of purpose and a desire to contribute to the lives of others. The literature suggests that career calling is a developmental construct linked to general developmental tasks, with its origin in the adolescent phase of an individual's life. Career calling becomes salient for young adults and is shaped over time (Praskova et al., 2014).

Research has consistently related calling to positive work, career and general life outcomes (Dobrow & Tosti-Kharas, 2011). Empirical research demonstrates calling to have positive relationships with psychological constructs such as job satisfaction, willingness to sacrifice and perceived organisational duty (Dobrow & Tosti-Kharas, 2011). Positive behavioural outcomes are also associated with calling. In the context of careers, the theoretical relationship of calling with career success has been evaluated, with calling having an empirical relationship with career development constructs such as decidedness, comfort, self-clarity and choice-work salience (Dobrow & Tosti-Kharas, 2011). Furthermore, the relationships between calling and best self-actualisation and strength of character have been researched in the context of general life characteristics, and empirical research has also reported that positive relationships exist between calling and life satisfaction, better health, zest and enthusiasm (Dobrow & Tosti-Kharas, 2011).

Calling is distinguished from other meaning-of-work constructs through having meaningfulness included as its core. Meaningfulness, or life meaning, can be defined as the extent to which individuals comprehend, make sense of or see significance in their lives. It accompanies the degree to which they perceive themselves as having a

purpose, mission or overarching aim in life (Praskova et al., 2014).

Consequently, the JD-R model can be used to determine not only SAPS employees' current job resources, job demands, occupational health and engagement levels but also their level of calling as personal resource. The results can then be utilised to design and implement appropriate interventions that will remedy the current situation within the SAPS. Thus, the relevance of the JD-R model and the application thereof within the SAPS can be realised, seeing that this occupation involves high levels of stress and job strain that can have detrimental effects on employees if left unaddressed, as was illustrated earlier. The question thus emerges why some individuals are enthusiastic about their work, while others are burned out and bored by their work, and why some employees cope and strive under stressful circumstances and others do not (Bakker & Demerouti, 2014).

## 2.4 RELEVANT LATENT VARIABLES

### 2.4.1 Engagement

Daily diary studies show that work engagement varies greatly within persons. The past decade has been characterised by an explosion of research activity and heightened interest in employee engagement among consultants, organisations and management scholars. Perhaps this is not so surprising, given the many claims that employee engagement is a key factor in an organisation's success and competitive advantage (Saks & Gruman, 2014). Furthermore, research evidence has determined that employee engagement on any specific day depends on the amount of job resources available. Therefore, it is important that employees be surrounded by a resourceful work environment (e.g. that they be supported, receive feedback and have decision latitude) on a day-to-day basis (Breevaart, Bakker & Demerouti, 2014).

The concept of engagement was first introduced by Kahn (1990), who conceptualised personal engagement as the employment and expression of one's preferred self in task behaviours (Jeung, 2011). It is a psychological state in which employees present themselves physically, cognitively and emotionally during role performance (Jeung, 2011). Although the concept of work engagement was first introduced nearly two decades ago, little academic research was conducted until the early 2000s. Interest in work engagement was heightened in the consulting industry as early as the 1990s,

but there were certain limiting factors associated with the heightened interest. It has also been determined that engagement is related to emotional and intellectual commitment, satisfaction, involvement and organisational citizenship behaviour (Collini, Guidroz & Perez, 2015). Engagement was successfully defined in practice by Harter, Schmidt and Kayes (2002) as referring to the individual's involvement in, satisfaction with and enthusiasm for his/her work.

Initially, engagement and disengagement were understood, according to Jeung (2011), as a moment or state that could fluctuate frequently within an individual and could not be completely explained by individual differences. Three dimensions that precede the state of engagement were identified, referred to as psychological conditions. These psychological conditions are meaningfulness (perceived return on investment of self in role performance), safety (perceived ability of showing and employing the self without fear of negative consequences for self-image, status or career) and availability (sense of possessing the necessary physical, emotional and psychological resources for investing the self in role performances) (Jeung, 2011). It was believed that when individuals worked under these psychological conditions, an intrinsic value could be attached to their work roles and performances, they tended to be more authentic in their performance and they possessed enough resources in order to fully invest themselves in their roles. Consequently, these three psychological states determined the level of engagement or disengagement within individuals (Jeung, 2011).

However, the concept of engagement has been redefined continuously by numerous scholars and practitioners. One scholar contributed to research on engagement by conceptualising two subfactors of attention (time spent on a role by thinking and concentrating on it) and absorption (losing track of time and becoming engrossed in a role). Engagement was also conceptualised by other scholars by differentiating it from job involvement (how a job is connected to one's self-image) and flow (one's cognitive state when performing a particular task) (Jeung, 2011).

Some researchers have challenged the belief that work engagement refers to a persistent and pervasive cognitive-affective state and argue that work engagement should not be viewed as an enduring experience. Rather, they propose that levels of

work engagement fluctuate from one day to another within one employee as a result of responses to specific situational and personal conditions. This proposition is known as daily engagement, as a complementary concept to enduring work engagement (Bakker, 2015).

Whereas enduring work engagement (between-person approach) refers to the general engagement level of an employee with work over extended periods of time, daily work engagement (within-person approach) reflects a particular state of mind existing at a particular point in time that fluctuates within the same individual over short time periods. Furthermore, momentary work engagement refers to fluctuations in engagement levels from hour to hour. The between-person approach, which assesses enduring work engagement, is particularly valuable to determine differences between teams and departments within an organisation. In contrast, the within-person approach, which assesses daily engagement, can be used to determine differences between occasions or activities that are associated with high or low levels of work engagement. It has also been determined that the JD-R model can be used to determine and predict daily fluctuations in work engagement (Bakker, 2015).

Engagement has also been conceptualised by occupational health psychologists, and one of the earliest studies, conducted by Maslach and Leiter (1997), considered engagement as an opposite concept to burnout on a single continuum. According to these studies, burnout was characterised by psychological states of exhaustion, cynicism and inefficacy, whereas engagement included high energy, involvement and efficacy.

In contrast to these studies, Schaufeli, Salanova, González-Romá and Bakker (2002) are of the opinion that burnout and engagement can be considered as independent, interrelated constructs, with engagement including three sub-dimensions:

a. vigour (characterised by a high level of energy, mental resilience, willingness to invest the self during working and persistence in the face of obstacles);
b. dedication (which includes perceived significance, enthusiasm, inspiration, pride and challenge at work); and

c. absorption (characterised by full concentration, happiness and engrossment during one's work while time passes quickly and one has difficulty detaching oneself from the work).

These sub-dimensions are considered as a representative conceptualisation of engagement (Hontake & Ariyoshi, 2016) and have been applied not only to burnout and stress research but also in the overall fields of management and psychology (Jeung, 2011). However, all things considered, Simbula, Guglielmi, Schaufeli and Depolo (2013) recommend, particularly for practical purposes (for example to avoid multicollinearity problems when multiple regression analysis is performed), that a total score be used as a single indicator of work engagement rather than the three separate scores for the sub-dimensions of work engagement.

Essentially, work engagement captures how individuals experience work: as stimulating and energetic and something to which they want to devote time and energy (the vigour component), as significant and meaningful (the dedication component) and as something that they are fully engrossed in and concentrated on (the absorption component) (Bakker, 2015; Hontake & Ariyoshi, 2016). Work engagement differs from other familiar concepts such as commitment and satisfaction in that they do not refer to attitudes towards the job and the organisation but rather represent an attitude towards work itself (dedication). Employees who seem satisfied with and committed to the organisation in general show more enthusiasm toward their job; however, this is not always the case. In addition, work engagement signals high physical and cognitive energy levels (vigour) as well as a clear focus on the work activity (absorption). Thus, it can be concluded that work engagement seems to be a rather more active, positive concept than satisfaction and commitment (Bakker, 2015).

It is also important to distinguish between workaholism and work engagement, as these constructs are often confused. Although both concepts are characterised by large investments that employees make in their work, workaholism refers to the tendency and obsession to work extremely hard by working compulsively, whereas work engagement refers to a positive and fulfilling state of mind that is characterised by vigour, dedication and absorption. Thus, workaholism and work engagement differ in that workaholism involves an obsession and inner drive to work hard, whereas work

engagement is driven by intrinsic motivation. Stated differently, workaholism is characterised by high effort with negative effects, while work engagement is characterised by high effort with positive results (Shimazu, Schaufeli, Kamiyama & Kawakami, 2015).

These positive and negative effects can be demonstrated through research findings on the effects of workaholism and work engagement on employee well-being and performance. These findings have indicated that workaholism results in employee unwell-being and poor performance, while work engagement has been found to result in employee well-being and superior performance. Consequently, it seems logical that organisations should attempt to prevent workaholism and promote work engagement instead (Shimazu et al., 2015). The JD-R model can be used not only to predict work engagement but also to predict occupational health and employee well-being.

### 2.4.2 Occupational health

Even in its most general form, health is a difficult construct to define. In some instances, health is defined as the absence of disease, while the World Health Organization defines health as a state of complete physical, mental and social well-being and not merely the absence of disease (Dana & Griffin, 1999). Alternatively, the occupational health psychology paradigm aims to develop, maintain and promote not only the health of employees in the workplace but also that of their families (Blustein, 2008).

However, there are two lines of research regarding employee health: a stress perspective and a well-being perspective. According to the stress perspective, a healthy workforce is a workforce in which strain or boredom is absent. In contrast, the well-being perspective regards a healthy workforce as one in which positive feelings among employees result in increased employee happiness and productiveness (Gandy, Coberley, Pope & Rula, 2016; Harter et al., 2002).

Although there are different perspectives on health at work, modern society has experienced a major shift in the focus of determining how employee well-being is evaluated. Instead of focusing on dysfunctional mental illness, the promotion of mental health is now emphasised. Furthermore, there is an increased focus on building

human strength as opposed to human weakness. There is also an increased emphasis on creating good lives and healthy people instead of focusing on healing psychologically stressed people. The last shift in focus refers to building the potential of people rather than focusing on repairing the worst (Seligman & Csikszentmihalyi, 2000; White, 2016). Thus, the current focus is to promote employee well-being by implementing a more positive approach.

A multivariate analysis has determined that the prevalence of an occupational health problem depends on job demands, job control and social support within a given job (Calnan, Wainwright, Forsythe, Wall & Almond, 2001). According to this analysis, high job demands are twice as likely as low job demands to result in an occupational health problem. Furthermore, low job control seems just over twice as likely as high job control to result in an occupational health problem. Moreover, low social support is 2.37 times more likely to result in an occupational health problem compared to high social support (Calnan et al., 2001).

Therefore, it seems essential that organisations provide the time and resources to employees in order for them to perform their tasks while also promoting their well-being (Chui, Chung, Wu & Ho, 2009). If these factors are not addressed, it could lead to an increase in stress levels. Work-related stress can be associated with burnout, job dissatisfaction, and physical and mental injuries (Khamisa, Oldenburg, Peltzer & Ilic, 2015). Studies show that high job strain correlates significantly with cardiovascular disease and work-related musculoskeletal disorders (Chui et al., 2009). Furthermore, job strain also affects job satisfaction and attendance rates while affecting turnover rates. Therefore, the effect of job demands, job control and job-related social support should be examined in order to determine the impact thereof on employees' well-being.

The job-strain model, also referred to as the demand-control model, was developed in order to address job strain within organisations. According to this model, high job demands result in negative consequences for an individual's physical and mental health, work performance and satisfaction (Chui et al., 2009). Job demands do not seem harmful but when present in conjunction with low control become a problem for employees' health, and the job is then referred to as a high-strain job. High-strain jobs

are one of four categories suggested by the job-strain model. These categories result from specific combinations of job demands and job decision latitude. When job demands and job control are both high, the job is described as an active job. A passive job is one in which the job demands and job control are both low, whereas a low-strain job is the result of job demands being low but job control being high (Chui et al., 2009).

The job-strain model was also expanded by including social support. This may facilitate more successful coping with high-strain jobs while also preventing any potentially harmful effects that high-strain jobs may cause (Chui et al., 2009). Social support refers to any variety of resources that assist individuals in their work environment, which can include task-related information, co-workers' assistance, feedback from supervisors and concern from others in the work environment. This construct can also increase encouragement, satisfaction and perceived performance.

It is not only the job-strain or job demand-control model that explains various job characteristics as well as situational and personal factors that can affect employee well-being, but a number of other theories and models have also been designed to explain these effects. Examples of other theories and models include affective events theory, the conservation of resources model, the stressor-detachment model and JD-R theory, which was discussed earlier (Ilies, Aw & Pluut, 2015).

The affective events theory framework emphasises the role that emotions play in affecting employee behaviour, attitudes and well-being. According to research, various events at work trigger affective reactions such as frustration, anger, joy and sadness, which can have a direct impact on employee engagement by influencing organisational citizenship or causing counterproductive workplace behaviours. Consequently, these events and emotions can impact on employee well-being (Ilies et al., 2015).

Another category of theories and models that can be used to identify and explain certain antecedents of employee well-being refers to theories of work demands, such as the job-strain or job demand-control model, the conservation of resources model and the JD-R model. Central to these theories is the belief that individual resources

such as social, financial and personal resources can buffer the negative effects that work may have on employees. In these theories, it has been indicated that employee well-being can be enhanced if sufficient resources are provided for employees to cope with high job demands while meeting their challenges and achieving their goals (Ilies et al., 2015).

Furthermore, it has also been determined that the capacity to recover from stressful events and exposure to stressors successfully affects employee well-being, with four recovery tactics that have been identified: psychological detachment from work, mastery, control and relaxation. These tactics assist employees either to restore depleted resources or to build new internal resources and coping mechanisms to buffer the effects of future stressors and job demands (Ilies et al., 2015). Another way in which the effects of stressful events can be buffered is through the provision of job resources.

### 2.4.3 Job characteristics as job resource

Job resources refer to the physical, psychological, social or organisational elements of a job and can be categorised according to the following levels: the organisational level (e.g. pay, career opportunities and job security), the interpersonal and social relations level (e.g. supervisor and co-worker support and team climate), the organisation of work level (e.g. role clarity and participation in decision making) and the task level (e.g. skill variety, task identity, task significance, feedback and autonomy). Resources seem to be essential for any employee to perform in the workplace due to their ability to:

a. be functional in achieving work goals;
b. reduce job demands and their associated psychological and physiological costs; and
c. stimulate personal growth, learning and development (Bakker & Demerouti, 2007).

Hence, resources are not only important to buffer the effects of job demands on employees (Lu, Sun & Du, 2016), but they also seem to be important in their own right. This belief is also supported by the job characteristics theory, which emphasises the motivational potential of job resources at the task level, including autonomy, feedback and task significance. In a more general sense, this belief is also in

agreement with conservation of resources theory, which is based on the assumption that human motivation is fundamentally based on the accumulation and maintenance of resources. Therefore, resources are valued in their own right or as a means to access and protect other resources (Bakker & Demerouti, 2007).

The job characteristics model is aimed at examining individual responses to jobs (e.g. job satisfaction, sickness absenteeism and personnel turnover) as a function of job characteristics (Bakker & Demerouti, 2014). These responses are moderated by individual characteristics. The core job characteristics include skill variety, task significance, task identity, feedback and autonomy, and these were defined earlier. These are all examples of job resources on the task level that formed the job resources of interest in this study.

These core characteristics are also expected to influence job satisfaction and intrinsic motivation, which can be achieved through the attainment of three critical psychological states (Bakker & Demerouti, 2014). These three psychological states, which were defined earlier, are the following: experienced meaningfulness of the work, experienced responsibility for outcomes and knowledge of the results of work activities.

The Job Diagnostic Survey (JDS) provides a direct method for measuring all variables in the job characteristics model but also includes two additional variables: feedback from agents and dealing with others (Boonzaier et al., 2001). Based on the job characteristics model, the JDS computes a score that reflects the overall motivating potential of a job. This score is calculated in terms of the five job characteristics and provides a single indicator of the extent to which the five characteristics are present in a job. The motivating potential score comprises the five job characteristics added together and given a score out of 35. The formula is illustrated below:

Motivating potential score = skill variety + task significance + task identity + feedback + autonomy

The job characteristics model and the JDS were formulated and compiled with the specific purpose of job redesign and together are regarded as one of the most

comprehensive frameworks for its purpose (Boonzaier et al., 2001). However, not only are job resources important to buffer the effects of job demands, but according to JD-R theory, personal resources also play a significant role in this regard.

### 2.4.4 Calling as personal resource

Personal resources refer to positive self-evaluations that seem to be lined with resilience and refer to the belief of individuals regarding their ability to control and influence their work environment successfully (Lu et al., 2016). Research has indicated that positive self-evaluations, as illustrated above, can predict goal setting, motivation, performance, job and life satisfaction as well as other desirable outcomes. Among the reasons that have been identified for this phenomenon is that the higher an individual's personal resources are, the more positive the individual's self-regard will be. Consequently, higher goal concordance will be experienced, with such individuals believed to be intrinsically motivated to pursue their goals, which in turn can trigger higher performance and satisfaction (Bakker & Demerouti, 2014).

The renewed interest in calling as a personal resource has produced the idea that calling is central to an individual's identity and connection with work, which could cast a deeper and different light on work-related behaviours (Elangovan et al., 2010). Emerging research on calling has determined that the motivation, satisfaction, career self-assessment and development of people with a sense of calling seem rather different from those who view their work as merely a job or career. A sense of calling was reported to correlate with lower levels of stress and depression and was also claimed to foster the acquisition of meta-competencies that ultimately improve individual and organisational performance. Furthermore, a sense of personal mission, purpose in life and elements of service towards others also characterise individuals with a sense of calling (Duffy, Allan et al., 2014).

The notion of calling originated within the field of theology, with Christian individuals regarded as being 'called' to serve a higher force (Wrzesniewski, Dekas & Rosso, 2009). Thus, calling depicted a more religious endeavour rather than one of self-focus. This notion originated when Max Weber created the Protestant concept of work ethic (Torrey & Duffy, 2012).

Calling lost its religious connotations with the emergence of modern society (Wrzesniewski et al., 2009). The majority of definitions of calling now focus on the individual experience of work as meaningful while endeavouring to make a positive impact on the world (i.e. more on an individual than a religious level) (Wrzesniewski et al., 2009).

Recent research on the concept of calling has emphasised various facets that illustrate little agreement on a single definition of the concept of calling. Firstly, job calling, as defined by some scholars, refers to deeply fulfilling work that entails ensuring that the world becomes a better place. Secondly, some suggest that the concept of calling contains a strong prosocial component through which individuals seek clarity regarding their purpose in life. Lastly, some believe that calling is an ultimate form of success in one's job (Praskova et al., 2014). Regardless of these differences in the definition of calling, most modern definitions stipulate that individuals' work in itself determines the level of meaning that individuals attach to their careers.

These definitions can differentiate individuals who see work as a calling from those who define it as having a job or a career. The primary focus of having a job lies in earning a salary, whereas having a career focuses more on occupational advancement. Individuals who define work as a calling engage in work not only for the sake of economic success or rewards but for the work itself (Hagmaier, Volmer & Spurk, n.d.; Wrzesniewski et al., 2009). Self-exploration and fulfilment are key elements in perceiving work as a calling. Here, individuals follow their own chosen path and have their own responsibilities. Intrinsic motivation thus is associated with perceiving one's job as a calling, whereas career and job orientations to work have a greater connection with extrinsic motivation (Wrzesniewski, McCauley, Rozin & Schwartz, 1997).

The notion that individuals see their work as a calling has seen a tremendous resurgence in current corporate society (Duffy et al., 2011). Thus, it is essential to form a better understanding of the contemporary relevance of calling and to evaluate the effect of having a sense of calling on adults within the working environment.

Three essential components contribute to viewing one's job as a calling. These components are external summons, purpose or meaning and prosocial motivation (Praskova et al., 2014). The essence lies in combining these three components to result in viewing one's job as a calling. The first component of external summons refers to the belief that if a job is viewed as a calling, it implies the simultaneous presence of a caller – a higher power, family legacy, the needs of society and the country or any other external force influencing the view of a calling (Duffy & Dik, 2013). The second component involves the notion that people's approaches to their jobs should contribute to the broader sense of a purpose in life. The last component refers to the belief that when people view their jobs as a calling, they attempt to assist others directly or indirectly or to contribute to the greater good by means of their careers. The combination of these three components thus assists in distinguishing calling from other related constructs of work centrality, work commitment, meaningful work, work engagement and prosocial work behaviours (Duffy & Dik, 2013).

Furthermore, it has also been suggested that calling is endorsed along a spectrum rather than having a calling versus not having a calling orientation (Duffy & Dik, 2013). Here, Duffy and Dik stipulate that calling is a continuous process rather than a once-off discovery and that callings can fluctuate over time.

According to Elangovan et al. (2010), the definition of calling has differed tremendously over time. Despite these differences, three fundamental aspects of the definition have remained constant. The first aspect refers to an orientation towards taking action. The second aspect refers to a sense of purpose and clarity in personal mission. The third aspect refers to prosocial intentions perceived by individuals with a calling (Praskova et al., 2014). These aspects in combination depict the definition of a calling and will now be discussed in greater depth.

The orientation towards action emphasises doing something instead of just being. This implies that calling refers to a series of action steps taken by an individual. The concept of calling thus focuses on certain actions that motivate the person while the beliefs, values and attitudes of such individuals are still essential (Horvath, 2014).

A sense of purpose and clarity in personal mission, direction and meaning implies that the called individual identifies with the action course that a calling entails. It is believed by several researchers that purpose, self-concept, identity, action and calling are interlinked (Horvath, 2014). This implies that when individuals have a purpose, a true self-concept and an identity and can take action, they may have a sense of calling. Called individuals experience convergence of their actual, ideal and ought selves, thus promoting a sense of meaningfulness, direction and clarity – essential elements in feeling called (Elangovan et al., 2010).

Prosocial intentions refer to striving to improve the world. Thus, calling stipulates having a personal purpose while simultaneously focusing on other people's well-being (Horvath, 2014). In essence, calling consists of three fundamental features that stay constant over time: action orientation, sense of purpose and clarity in personal mission, and prosocial behaviour (Horvath, 2014).

To date, relatively few studies have been conducted on the antecedents, consequences and correlates of calling (Duffy & Dik, 2013). Most qualitative studies discuss behaviours of individuals living a calling, which include spending time in self-reflection, working long hours, engaging in helping behaviour at work and crafting their jobs to align with what they feel called to do. However, these studies were conducted on relatively small groups of people who perceived themselves to have a calling and therefore cannot be regarded to have sufficient support (Duffy & Dik, 2013).

The meanings that individuals attach to their work, such as their beliefs about its purpose or what it achieves, are believed to influence important work-related outcomes such as job performance, job satisfaction, organisational citizenship behaviour and well-being (Dik & Duffy, 2009; Hagmaier et al., n.d.). One aspect of the meaning of work refers to the extent to which it contributes to a sense of purpose or meaningfulness. Purpose is defined as "a stable and generalized intention to accomplish something that is at once meaningful to the self and of consequence to the world beyond the self", whereas meaningfulness is conceptualised as "the sense made of, and significance felt regarding, the nature of one's being and existence" (Dik & Duffy, 2009, p. 425). Although relatively limited empirical research has been conducted on the purpose or meaningfulness in the work domain, more than 40 years

of research suggests that the overall presence of meaning in life promotes psychological health and well-being.

Scholars have also discussed the possible dark side of a calling, when a sense of calling or living thereof could result in negative outcomes for some individuals (Duffy & Dik, 2013). It has been determined that called individuals may become less receptive to a trusted mentor's guidance, which can result in tunnel vision. Furthermore, a study conducted on career commitment as mediator between calling and work outcomes indicated that career commitment actually suppressed the link between calling and withdrawal intentions. Individuals with a calling who were not committed to their career were more likely to withdraw from their current job. It may be that having a calling but not being able to live it out potentially could be related to negative outcomes (Duffy & Dik, 2013).

Recent research suggests that a clear distinction should be made between perceiving a calling and living a calling (Duffy & Dik, 2013). Studies have found that the bivariate relations between perceiving a calling and living one to proximal outcomes differ. Among working adults, it was found that a stronger correlation exists between living a calling and career commitment, work meaning and job satisfaction in comparison with perceiving a calling (Duffy, Autin et al., 2014). It has been determined that without being able to live out a calling towards a particular career path, individuals often regret not being able to do so and experience stress from trying to live out their callings outside the work environment (Duffy, Douglass, Autin, England & Dik, 2016). It appears critical to measure both types of calling in order to formulate an accurate conclusion regarding the role that calling plays in life (Duffy & Dik, 2013).

It has been proposed that calling is a valuable, inclusive and cross-culturally relevant construct that provides a promising template for guiding research and practice that target individuals' experience of work as meaningful. Calling is increasingly being viewed as a developmental and dynamic construct, with the process commencing before one is work ready and being able to be adapted in periods of a change in circumstances and shaped by other, external summons (e.g. observing parents' work attitudes or accessibility to resources and support needed to pursue and live one's calling). Calling becomes important during phases of goal development and when

engaging in activities and actions related to creating a meaningful future by emerging adults (Praskova et al., 2014).

Based on developmental and goal-setting perspectives and beliefs, calling seems to manifest differently in emerging adults in comparison to working adults who already seem to be living their calling. Calling is also consistent with the identification of strong personal goals and is based on future-directed behaviour, cognitions and emotions that are relevant in managing and attaining goals. Thus, in emerging adults, calling can be defined as a mostly self-set, salient career goal that can be regarded as meaningful and purposeful while the individual has the potential to grow and adjust by engaging in goal-directed behaviour and processes aimed at attaining this goal (Praskova et al., 2014). Consequently, calling as personal resource, along with the provision of job resources, can buffer the effects of job demands.

### 2.4.5 Job demands

Job demands have become a central focus of organisational stress theories. According to these theories, job demands may become a source of stress when employees cannot recover from the efforts exerted to meet these demands. As a result of stress, certain work behaviours that can either include organisational citizenship behaviours or workplace deviance behaviours could manifest (Jenkins, Heneghan, Bailey & Barber, 2015).

When faced with job demands in excess, employees may attempt to conserve energy by offsetting resources and work efforts. By doing so, the likelihood of organisational citizenship behaviour occurring becomes very small and employees are more likely to engage in workplace deviance behaviours. Deviance behaviour may manifest as passive withdrawal behaviour aimed at escaping job demands or as active resource-scouting behaviour that has indirect, counterproductive consequences (Jenkins et al., 2015).

Job demands refer to different facets of a job that require sustained effort, both physically and mentally, and are associated with physiological and psychological costs. Examples of job demands include work overload and emotional, cognitive and

physical demands that may cause severe stress and strain (Trepanier, Fernet, Austin, Forest & Vallerand, 2014).

The influence of stress or job strain on individual well-being has been proven to be potentially severe if not addressed appropriately. According to De Bruin and Yiannakis (2012), various factors affect job stress, including the type of work, work stressors and the support received at work and at home. Furthermore, environmental conditions in the workplace and career threats can also be experienced as stressful, which in turn may lead to lower levels of job satisfaction.

However, stress is more likely in some situations than others and in some people than others. As a result, the sources of stress seem to be unique to how individuals experience stress. These sources or conditions that result in stress are called stressors and refer to the demands placed on an individual that act as a stimulus that evokes a response, such as negative emotions, anxiety and stress. Several sources of stress have been identified and include the following: role ambiguity, relationships, tools and equipment, career advancement, job security, lack of autonomy, work/home interface and workload (Gomes & Afonso, 2016; Hopkins, 2014).

Work stress is characterised by a person's incapacity to cope with occupational stresses on the mind and body within a work context. It indicates that an individual cannot efficiently control job-related demands, such as work overload, role conflict in the workplace and poor working conditions. Consequently, work stress can definitely have a harmful effect on the well-being of an individual, and the effects thereof are noticeable at a cognitive, behavioural, physical and psychological level. As a result, the experience of work stress can alter and influence the way the person feels, thinks and behaves and can also produce changes in cognitive, behavioural, physical and psychological functions (Hopkins, 2014).

It has also been determined that work stress may lead to incompetence, increased absenteeism, low performance, poor motivation and high turnover. Furthermore, stress may also lead to other negative outcomes such as lower work satisfaction, depersonalisation, emotional exhaustion and a decreased sense of accomplishment (Hopkins, 2014). It has also been determined that when facing work stress, an

individual may become emotionally agitated, feel frustrated and experience feelings of burnout, which may lead to depression (Wang et al., 2015). Therefore, it is crucial that individuals identify ways to deal with stress.

Coping resources can be described as the psychological capacities inherent in individuals that enable them to handle stressors more effectively, to experience fewer or less intense symptoms upon exposure to a stressor or to recover faster from exposure to a stressor. Hopkins (2014) identified five coping resources that are deployed in order to cope with stress: cognitive resources, social resources, emotional resources, spiritual resources and physical resources. It has been determined that these resources may assist employees faced with emotionally demanding situations. Personal resources can also be included as a coping resource and refer to positive aspects of the self, which include an individual's ability to control and influence his/her environment. According to Xanthopoulou, Bakker, and Fischbach (2013), employees utilise their personal resources to become engaged over time, while also buffering the effects of emotionally demanding situations. Consequently, depending on personal, emotional and job characteristics and demands, individuals will react in a particular way in a given situation.

### 2.4.6 Summary of latent variables

This section has defined and discussed the relevant constructs of interest in this study. The respective relationships between and consequent hypotheses related to these variables will now be elaborated upon.

## 2.5 RELATIONSHIPS BETWEEN LATENT VARIABLES

### 2.5.1 Engagement and occupational health

According to Mauno, Kinnunen and Ruokolainen (2006), the factors affecting work engagement can be approached from the viewpoint of occupational stress models, with the JD-R model an example of such a model. The fundamental assumption of this model, as discussed earlier, is that although individuals' work environments may differ, these environments can be divided into two distinct categories: job demands and job resources. Job demands may result in physiological and/or psychological costs, otherwise known as strain, whereas job resources stimulate personal growth

and development by reducing the effects that job demands may have on employees (Mauno et al., 2006).

Another assumption underlying the JD-R model refers to the relations between job demands/resources, well-being and attitudinal outcomes. It is hypothesised that job demands (excessive workload, job insecurity and role ambiguity) may result in strain reactions (impaired well-being and stress) whereas a lack of resources (lack of social support and job control) may hinder goal accomplishment, which may result in feelings of frustration and failure (Mauno et al., 2006). Therefore, resources are essential in order to facilitate work engagement and occupational health.

According to Xanthopoulou et al. (2013), personal resources have been recognised as the most crucial determinants of work engagement in conjunction with job resources. Therefore, it is expected that individuals utilise their personal resources when demanding conditions occur, and personal resources consequently can also be seen as a form of coping. Under conditions of high demands, individuals need to take control of the situation and actively search for appropriate solutions. This will result in enhanced engagement. However, buffering the effects of job demands will result not only in enhanced engagement but also in occupational health, which in turn will influence employees' engagement levels.

A constant interaction between resources and demands that influences engagement and occupational health can thus be identified. Therefore, it can be concluded that job resources that act as motivators give rise to work engagement; engaged employees exhibit positive job attitudes while also experiencing good mental health and seeming to perform better than those employees who are less engaged (Schaufeli & Bakker, 2003). Therefore, the following hypotheses are suggested:

**Hypothesis 1:** Engagement ($\eta_3$) has a significant positive effect on occupational health ($\eta_4$) among SAPS employees.

**Hypothesis 2:** Occupational health ($\eta_4$) has a significant positive effect on engagement ($\eta_3$) among SAPS employees.

### 2.5.2 Job characteristics and engagement

Engaged individuals are active agents who take initiative at work and generate their own positive feedback (Schaufeli & Bakker, 2003). Furthermore, it also seems that these individuals' values are congruent with those of the organisation for which they work, and they also are engaged in activities outside the work environment, which differentiates them from workaholics. Although engaged individuals report tiredness at times, this is not similar to the burnout symptom of fatigue but is rather described as a pleasant state due to being associated with positive accomplishments.

Engagement is a multidimensional motivating concept with three psychological conditions as foundational and proximal antecedents: meaningfulness, safety and availability (Jeung, 2011). Individual-specific variables have been proven to influence engagement levels and include age, race, gender and personality factors (Jeung, 2011). According to a recent study on 901 employees in the United Kingdom, engagement was higher among employees of the same age as their co-workers. Furthermore, engagement seems important to secure lower turnover rates in a diverse organisation. It is also believed that female individuals seem more engaged than male individuals. Furthermore, in a study based on the five-factor model of personality, a positive correlation between extraversion and engagement was found. The effect of personal resources (self-efficacy, self-esteem and optimism) was also found to predict engagement.

Furthermore, a series of empirical analyses supported the significant effects of skill variety, task identity, task significance, autonomy and feedback on influencing the level of engagement. In addition to these findings, job resources have also been identified as significant antecedents of engagement (Bakker, 2015; Bakker & Demerouti, 2014). According to Jeung (2011), the characteristics of job design have been considered as the primary determinants of engagement due to it being the overall motivating potential of a job. Therefore, the following hypothesis is suggested:

**Hypothesis 3:** Job characteristics ($\eta_1$) have significant positive effects on engagement ($\eta_3$) among SAPS employees.

### 2.5.3 Calling and engagement

A considerable number of university students and employees in various professions have reported that they regard their work as a calling (Hirschi, 2012). Callings are believed to affect individual career development and organisations in various ways, which may include increased job satisfaction and organisational commitment. Although positive correlations with personal and organisational variables have been established, there is limited theoretical and empirical evidence to explain the influence of callings.

Theoretically, a deep sense of meaning, dedication and personal involvement in work has been reported by individuals with a sense of calling, and these are conceptually related to work engagement (Hirschi, 2012). However, callings are distinguished from work engagement through the called person having a deep-seated passion for work and a sense of striving to fulfil his/her life purpose through work. In an empirical study (Hirschi, 2012) among managers, it was confirmed that these two constructs are significantly correlated but also empirically distinct.

Although positive correlations with different personal and organisational outcomes have been established, the reasons for these relationships remain unclear (Hirschi, 2012). According to Dik and Duffy (2009), the relationships depend on the level of calling and they suggest that different levels of calling may correlate with a number of criterion variables related to work, which refer to job satisfaction, job performance, work commitment, work engagement, organisational citizenship behaviour and tenure. Furthermore, levels of calling are also linked to a number of higher order variables that include life satisfaction, life purpose, meaning in life and social connectedness. It has also been suggested that calling may have positive outcomes due to providing a sense of meaningfulness and identity at work (Hirschi, 2012).

As suggested in the study conducted by Hirschi (2012), these factors allow individuals to experience work engagement or vigour, dedication and absorption at work more often. The conclusion that this study draws says that calling can be expected to have positive personal and organisational effects such as work engagement. Therefore, the following hypothesis can be derived:

**Hypothesis 4:** Calling ($\eta_2$) has a significant positive effect on engagement ($\eta_3$) among SAPS employees.

### 2.5.4 Job characteristics and calling

According to Boonzaier et al. (2001), there are a number of moderators and mediators of the relationships between job characteristics and outcomes. These include both worker and work environment characteristics. Worker characteristics include the following: psychological state, growth-need strength, and knowledge and skills, whereas work environment characteristics include satisfaction with pay, security, supervision and co-workers. Of particular interest are the three psychological states, namely experienced meaningfulness, experienced responsibility and knowledge of results (Boonzaier et al., 2001).

It is believed that certain job characteristics predict these psychological states and that for individuals to experience meaningfulness, a job should contain skill variety, task identity and task significance. Autonomy is necessary for individuals to experience responsibility for their work, whereas feedback seems important for individuals to have knowledge of results (Boonzaier et al., 2001).

Regressions were computed that predict the outcome measures based, firstly, on all three psychological states as a unit, secondly, on the three possible pairs of the psychological states and, thirdly, on each of the three psychological states separately. The results indicate that when psychological states are separate, they can predict outcomes and that the predictive power is increased when used in pairs (Boonzaier et al., 2001). The strongest predictive combination can thus be identified as any two of the three psychological states.

Integrating experienced meaningfulness and experienced responsibility into a single dimension was suggested by Fried and Ferris (1987). Furthermore, data collected from 188 subjects indicated that not all three psychological states were necessary when attempting to maximise outcomes. A meta-analysis by Fried and Ferris (1987) indicated that skill variety and task significance had the strongest correlations with experienced meaningfulness. Task identity, however, showed a stronger relationship with experienced responsibility than with experienced meaningfulness, whereas

autonomy showed equal-strength relationships between experienced responsibility and meaningfulness. Therefore, the predictors as stated in the JD-R model need to undergo certain modifications, as can be concluded from the abovementioned research results. The important element in this study, however, was to determine the relationships that existed among latent variables.

It can be concluded that experienced meaningfulness plays a prominent role, whereas knowledge of results seems insignificant and experienced responsibility contributes only intermediately (Boonzaier et al., 2001). According to Bakker and Demerouti (2014), individuals can assign meaning to their jobs by changing the design of their jobs and by choosing tasks. This process of employees shaping their jobs is known as 'job crafting'. Job crafting is defined as the physical and cognitive changes that individuals make in their task or relational boundaries. Physical changes refer to the scope, form and number of job tasks, whereas cognitive changes refer to changing one's perspective of a job (Bakker & Demerouti, 2014). The motivation for job crafting originates from three possible individual needs: the need to take control over certain aspects of work, the need to enable a more positive sense of self-expression and confirmation from others and the need to fulfil the basic need for connection to others.

Meaningfulness is what distinguishes a calling from other closely related constructs. Research has indicated that individuals approach their work as a calling and craft their jobs in order to allow them to experience meaningfulness (Dik & Duffy, 2009). Furthermore, individuals in extremely undesirable jobs often derive meaning by reframing, recalibrating or refocusing the social function of their work tasks. Therefore, the characteristics of a job make it meaningful to an individual, who consistently correlates these characteristics in a positive direction with desirable criterion variables, for example career and organisational commitment, organisational citizenship behaviour and job satisfaction. The importance of calling and job characteristics has thus become prominent in research, and therefore the following hypotheses are suggested:

**Hypothesis 5:** Job characteristics ($\eta_1$) have significant positive effects on calling ($\eta_2$) among SAPS employees.

**Hypothesis 6:** Calling ($\eta_2$) has a significant positive effect on job characteristics ($\eta_1$) among SAPS employees.

### 2.5.5 Job demands and occupational health

According to meta-analyses conducted on the relationship between job demands and occupational health, work stressors (e.g. role clarity, role conflict, role stress, stressful events, workload and work pressure) demonstrate relatively strong correlations with emotional exhaustion, a dimension of job burnout (a commonly used indicator of psychological well-being). Furthermore, a study on relationships between various work stressors and self-reported physical complaints (i.e. backache, headache, eye strain, sleep disturbance, dizziness, fatigue, appetite loss and gastrointestinal problems) found that all six work stressors demonstrated statistically significant but modest correlations with a composite measure of physical symptoms (Ganster & Rosen, 2013).

A study conducted by Rose and Glass (2010) found that community health nurses frequently reported job strain and mental distress. The reason for this may be witnessing pain, suffering, loss and grief related to end-of-life care and the emotional demands that these make on nurses. Furthermore, family relationships and role conflict, environmental factors and time restraints were also sources of stress identified by the nurses. Stress may also occur when nurses negotiate organisational restructuring, policy changes, nursing shortages, a lack of resources and organisational issues. Emotional balance is believed to enhance nurses' well-being when caring for terminally ill clients, and the meaning of well-being has been identified as a unique experience for each individual.

Furthermore, the study conducted by Rose and Glass (2010) also identified three themes that describe the interconnectedness of work, well-being and practice. These three themes are 'demands', 'rewards' and 'comfort'. Demands were revealed as an emotional burden (due to the inability to manage accompanying emotions caused by demands). The rewarding aspect was revealed as the nurses spoke of the satisfaction gained from positive relationships, contributing to quality care and the aim to make a difference to client outcomes. Comfortability was interpreted as the nurses' perceived level of engagement in the emotional and psychological aspects of client care. Inherent in the comfortability aspect was emotional well-being. When nurses were

comfortable with their skills, it resulted in greater rewards and enhanced well-being. In contrast, if nurses lacked confidence, it resulted in decreased satisfaction and impaired emotional well-being.

Experiencing well-being is important for managing job demands associated with a particular work environment (Rose & Glass, 2010). According to Xanthopoulou et al. (2013), the negative relationship between emotionally demanding conditions and employee well-being may be explained by the health impairment process of the JD-R model. According to this model, emotionally demanding conditions require an investment of energy that may lead to employees exhausting their resource reservoir. When energy is depleted, it may lead to job strain. This is also in line with Baumeister, Bratslavsky, Muraven and Tice's (1998) theory of ego depletion, which stipulates that volitional acts draw on a limited portion of energy resources. Therefore, any subsequent act that requires self-control results in using all the limited energy and consequently exhausting it.

In relation to the suggestion of the following hypothesis, cognisance should be taken of job demands as having both a positive and negative influence on employee well-being (as illustrated in studies mentioned earlier). Therefore, the following hypothesis is suggested:

**Hypothesis 7:** Job demands ($\xi_1$) have significant effects on occupational health ($\eta_4$) among SAPS employees.

## 2.6 MODERATING EFFECTS

According to Bakker and Demerouti (2014), there are two possibilities for demands and resources to have a *combined effect* on employees' well-being and indirectly to influence both employees' and organisational performance.

### 2.6.1 The first interaction effect

The first interaction effect is one in which *job resources and personal resources* buffer the impact of job demands on strain. Several studies have shown that *job resources*, such as social support, performance feedback, autonomy, opportunities for development and so forth, can mitigate the impact of job demands on strain (Bakker,

Demerouti & Sanz Vergel, 2014). Schaufeli and Taris (2014) found that the combination of high demands and high job resources added significantly to the prevention of burnout. More specifically, high levels of workload, emotional demands and physical demands do not result in high levels of exhaustion and cynicism if employees experience adequate levels of autonomy, receive feedback and social support or have a high-quality relationship with their supervisors.

Consequently, the buffering hypotheses will explain interactions between job demands and job resources by proposing that the relationship between job demands and occupational health problems is weaker for those employees enjoying a high degree of job resources. Job characteristics are regarded as job resources, and thus it is hypothesised that they will prevent the development of stress (i.e. job demands) and occupational health problems.

Moreover, an important extension of the original JD-R model (Bakker & Demerouti, 2014; Bakker et al., 2014) is the inclusion of *personal resources* (i.e. calling in this study) in the model and theory. It has been suggested that the endorsement of a calling among working adults and undergraduate students may result in favourable career and well-being outcomes and enable the buffering of job demands (Duffy et al., 2011). More specifically, individuals who endorse a calling may be more satisfied with work life and their work, may view life as more meaningful and may be more decided and committed to their careers and organisations. However, research on organisational outcomes is limited and the completed studies have suffered from methodological limitations (Duffy et al., 2011).
Experiencing meaning in life has been suggested to correlate with a variety of benefits, including fulfilment, satisfaction, subjective well-being, enjoyment and physical health (Duffy et al., 2011). Studies examining the relationship between calling and well-being have focused mainly on life meaning and satisfaction as criterion variables (Duffy & Dik, 2013).

A sample of 5 000 undergraduate students perceiving a calling showed a weak correlation of calling with life satisfaction and a moderate correlation with life meaning. In contrast, employed adults with a calling were reported to be more satisfied with life and to have more zest (Duffy & Dik, 2013). Two studies performed on undergraduate

students reported that religiousness and life meaning could mediate the relationship between calling and life satisfaction. Therefore, it can be concluded that perceiving a calling is linked with life meaning and satisfaction while life meaning can also mediate the link between calling and life satisfaction (Duffy & Dik, 2013).

Meaningfulness in particular can serve the purpose of buffering depression and anxiety while correlating positively with a variety of healthy psychological functioning indices (Dik & Duffy, 2009). Furthermore, meaningfulness has also been conceptualised as one of several factors from which happiness can arise, and it is also a desirable end state that individuals wish to reach. It is important, however, to take cognisance of the role that calling plays in this regard, seeing that only individuals seeking meaning in life while having a calling report greater well-being and positive career development progress. Therefore, individuals seeking a calling may not necessarily experience well-being (Duffy & Dik, 2013).

In other words, it may be expected that SAPS employees with high levels of calling will focus more on job resources than on job demands and, as a result, they will experience lower levels of exhaustion (i.e. occupational health problems) and higher levels of work engagement (Xanthopoulou et al., 2013).

Consequently, it is hypothesised that calling as a personal resource will prevent the development of stress (i.e. job demands) and play a buffering role in the relationship between stress (i.e. as job demands) and occupational health. Meaningfulness has already been proven to be realised when certain job characteristics are present, and a positive relationship has already been identified between calling and job characteristics. Research on occupational health has also shown consistently that job characteristics and personal resources predict employee well-being (Reis & Hoppe, 2015). Therefore, the following hypotheses can be formulated with regard to the buffering effect that job resources and personal resources have on the relationship between job demands and occupational health:

**Hypothesis 8:** Job characteristics ($\eta_1$) have significant positive moderating effects on the relationship between job demands ($\xi_1$) and occupational health ($\eta_4$).

**Hypothesis 9:** Calling ($\eta_2$) has a significant positive moderating effect on the relationship between job demands ($\xi_1$) and occupational health ($\eta_4$).

### 2.6.2 The second interaction effect

The second interaction is one in which *job demands* amplify the effect of job and personal resources on work engagement. Research has shown that job resources become salient and have the strongest positive impact on work engagement when job demands are high. Job resources become valuable and foster dedication to the tasks at hand particularly when an employee is confronted with challenging job demands (Bakker et al., 2014).

Within the occupational context, the JD-R model has been known to underline the motivational and wellness-promoting potential of job-related resources (Hakanen, Perhoniemi & Tanner, 2008). The JD-R model stipulates that various job demands (time pressure, emotional workload and problems in physical work environment) may cause resource loss, such as health problems and the drainage of employees' sources of energy. In contrast to this, the JD-R model also suggests that job resources (autonomy, immediate feedback and rewards) are essential in gaining resources, of which well-being and motivation at work are examples that otherwise are known as work engagement (Hakanen et al., 2008).

Positive emotions seem to broaden people's momentary thought-action repertoires and assist in building enduring personal resources. This kind of initiative and creative activity fosters new ideas, novel solutions and optimal functioning, not just temporarily but also in the long term. Therefore, it is believed that employees who experience emotional and motivational fulfilment at work, also known as work engagement, may acquire more initiative over time. Furthermore, psychological recovery during leisure time also seems to predict higher work engagement as well as task resources (Hakanen et al., 2008).

It has also been determined that employees who have sufficient job resources available to them can cope more effectively with their daily job demands (Bakker & Demerouti, 2014). Several studies have proven that job resources, such as social

support, autonomy, performance feedback and development opportunities, seem to buffer the effect of job demands on employees. Thus, when a worker is confronted with challenging job demands, job resources become valuable and result in dedication to the task at hand.

These assumptions were also tested on a sample of Finnish dentists. The dentists were split into two random groups in order to cross-validate the findings. The findings were significant and support the belief that high job demands lead to increased engagement when job resources are also high (Bakker & Demerouti, 2014). Similar findings have been reported in the study by Bakker et al. (2014) among Finnish teachers working in elementary, secondary and vocational schools. These authors concluded that job resources acted as buffers and diminished the negative influence that job demands might have on engagement levels among pupils. It was also confirmed that job resources particularly influenced work engagement when teachers were confronted with high levels of pupil misbehaviour. Furthermore, it was determined that supervisor support, innovativeness, appreciation and organisational climate were essential job resources for teachers in order to cope with demanding interactions with pupils.

It has been found that personal resources, of which calling is the one specifically applicable to this study, partially mediate the relationship between job resources and work engagement, thereby suggesting that job resources foster the development of personal resources (Bakker & Demerouti, 2014). A longitudinal study (Bakker & Demerouti, 2014) suggested personal resources (calling) to be reciprocal with job resources and work engagement over time. Therefore, job resources not only predict personal resources and work engagement, but personal resources (calling) and work engagement, in turn, predict job resources.

Another study tested the boosting effect of personal resources (calling). Here it was hypothesised that weekly emotional job demands could facilitate the positive impact of personal resources (calling) on work engagement (Bakker & Demerouti, 2014). The results indicated that emotional job demands strengthened the effect that personal resources had on work engagement. Reversed causal relationships were also determined. Here the conclusion was that job demands were related to burnout and

that burnout was also related to job demands over time. In contrast, job resources were determined to be predictors of work engagement, and work engagement was positively related to job resources over time.

Consequently, the following hypotheses can be formulated concerning the positive effect that job demands have on the relationship between job resources and personal resources and work engagement:

**Hypothesis 10:** Job demands ($\xi_1$) have significant positive moderating effects on the relationship between job characteristics ($\eta_1$) and engagement ($\eta_3$).

**Hypothesis 11:** Job demands ($\xi_1$) have significant positive moderating effects on the relationship between calling ($\eta_2$) and engagement ($\eta_3$).

Taking the two interaction effects into account, it became apparent that it was essential to investigate the multiplicative impact of demands and resources when attempting to formulate a complete understanding of the emergence of occupational health and engagement. Seeing that employees never experience work overload in isolation but rather experience it in some kind of support from or interaction with their supervisor, it is sensible to examine combinations of work characteristics when explaining the experience of occupational health and work engagement (Bakker & Demerouti, 2008).

## 2.7 THE CONCEPTUAL MODEL

The conceptual model, illustrated in Figure 2.2, represents the latent variables, the interrelationships between them as well as the 11 formulated hypotheses.

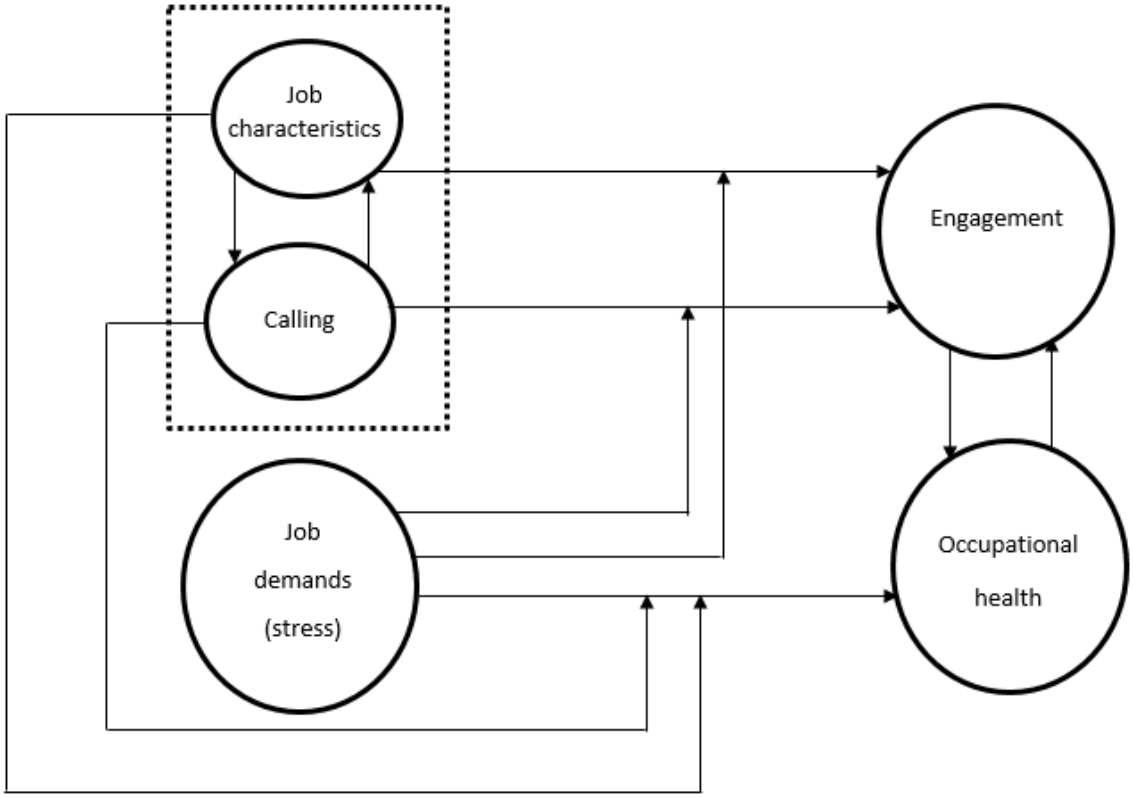


***Figure 2.2.*** **Conceptual model**

## 2.8 CHAPTER SUMMARY

This chapter commenced with a brief overview of the earlier job stress and motivation models from which the JD-R model was developed. Then an in-depth literature review based on the constructs of interest was presented, and the theoretical aspects of the constructs were discussed in detail. Finally, the different relationships between the constructs were explained and the hypotheses of the study were stated. The research-initiating questions that originated from the literature review and relevant theory therefore ask:

a. How has calling been defined and measured in the workplace?
b. How does calling network with other variables to influence engagement and occupational health in the workplace?
c. What is the effect of calling on engagement and occupational health in the workplace?

The next chapter will present the methodology that was used to conduct the research and to investigate the stipulated hypotheses.

# CHAPTER 3

# RESEARCH DESIGN AND METHODOLOGY

## 3.1 INTRODUCTION

The purpose of this chapter is to describe the methodology applied throughout the research process to gain answers to the research-initiating questions. The research methodology includes the tools and procedures that were used during the research process. According to Theron (2014), research methodology serves the epistemic ideal (i.e. the search for truthful knowledge) through two characteristics: objectivity and rationality. The validity and credibility of the explanations derived from the proposed model are also essential and depend on the method of inquiry used to arrive at the explanations. Therefore, it can be concluded that the probability of obtaining valid and credible results is a function of the methodology used. By explicitly focusing on the reduction of error, the validity and credibility of inferences are enhanced (Theron, 2014). Therefore, the researcher must tread carefully throughout the research process.

Science commits itself to an epistemic imperative to search for valid reasons. These reasons can be regarded as valid (or permissible) to the degree that the explanation closely fits the available data (Babbie & Mouton, 2001). Thus, the scientific method, as the method of inquiry, serves the epistemic ideal through the inclusion of rationality and objectivity as control mechanisms (Babbie & Mouton, 2001).

Previous research endeavours advise that before commencing with a discussion of the methodology utilised in the research study, the study objectives be revisited (Langenhoven, 2015; Nell, 2015). As mentioned in Chapter 1, the main objectives of this study were to:

a. define calling and show how it is measured;
b. indicate how calling interacts with other variables in order to influence engagement and occupational health at work;
c. indicate the effect of calling on engagement and occupational health at work; and
d. test a calling structural model in the workplace.

Consequently, this chapter aims to discuss the tools and procedures utilised in the present study to address the objectives and answer the research-initiating questions. The research design used in this study will be described, followed by a discussion of the selected participants and the relevant sample. The measurement instruments used in the current study will also be discussed, and particular attention will be paid to the validity and reliability of the separate measurements. Data collection and data capturing will be explained, followed by a discussion of the statistical analysis that was conducted. This chapter will be concluded with a discussion on research ethics.

## 3.2 SUBSTANTIVE RESEARCH HYPOTHESES

The positivistic interpretation of scientific research insists that substantive hypotheses undergo empirical testing. Thus, if a scientist believes that something is indeed so, this belief must be tested against objective reality (i.e. the belief must be tested empirically) (Theron, 2014). However, in order to empirically test this belief, it should be made known what it is that the scientist believes. This highlights the importance of hypotheses as representing tentative predictions/propositions regarding the relationship between two or more phenomena or variables. Therefore, the formulation of hypotheses is an essential part of science in that it allows the beliefs of scientists to be tested empirically.

The proposed structural model of calling presented in Figure 3.1 schematically portrays the hypotheses developed through the theorising in Chapter 2. These hypotheses, formulated in terms of latent variables, are substantive research hypotheses. Strictly speaking, substantive research hypotheses are not testable. Consequently, substantive research hypotheses must first be translated into operational terms. However, developing substantive research hypotheses, as listed below, through theorising is an essential first step when attempting to empirically test the proposed structural model of calling.

**Hypothesis 1:** Engagement ($\eta_3$) has a significant positive effect on occupational health ($\eta_4$) among SAPS employees.

**Hypothesis 2:** Occupational health ($\eta_4$) has a significant positive effect on engagement ($\eta_3$) among SAPS employees.

**Hypothesis 3:** Job characteristics ($\eta_1$) have significant positive effects on

engagement ($\eta_3$) among SAPS employees.

**Hypothesis 4:** Calling ($\eta_2$) has a significant positive effect on engagement ($\eta_3$) among SAPS employees.

**Hypothesis 5:** Job characteristics ($\eta_1$) have significant positive effects on calling ($\eta_2$) among SAPS employees.

**Hypothesis 6:** Calling ($\eta_2$) has a significant positive effect on job characteristics ($\eta_1$) among SAPS employees.

**Hypothesis 7:** Job demands ($\xi_1$) have significant effects on occupational health ($\eta_4$) among SAPS employees.

**Hypothesis 8:** Job characteristics ($\eta_1$) have significant positive moderating effects on the relationship between job demands ($\xi_1$) and occupational health ($\eta_4$).

**Hypothesis 9:** Calling ($\eta_2$) has a significant positive moderating effect on the relationship between job demands ($\xi_1$) and occupational health ($\eta_4$).

**Hypothesis 10:** Job demands ($\xi_1$) have significant positive moderating effects on the relationship between job characteristics ($\eta_1$) and engagement ($\eta_3$).

**Hypothesis 11:** Job demands ($\xi_1$) have significant positive moderating effects on the relationship between calling ($\eta_2$) and engagement ($\eta_3$).

## 3.3 THE STRUCTURAL MODEL

The literature study presented earlier culminates in a structural model (i.e. a schematic representation of the hypotheses constructed as an answer to the research-initiating questions through theorising). Once the latent variables have been operationalised, the model allows for the formulation and empirical testing of specific hypotheses. The proposed structural model is depicted in Figure 3.1.

When the conceptual model (Figure 2.2) is compared to the structural model (Figure 3.1), it is evident that there are some differences. Additional variables that can be observed in Figure 3.1 represent the *dummy* variables, which represent the interaction/moderating effects between latent variables. The way to test a moderating/interaction effect in PLS/structural equation modelling (SEM) is to create a separate variable by multiplying the score of the moderating variable with the score of

the ‘independent’ variable that is hypothesised to influence the ‘dependent’ variable (Hellmann & Puri, 2000).

The moderating variable (indicated by ‘*’ in Table 3.1) consequently becomes a dummy variable that directly influences the endogenous variable. Table 3.1 provides a summary of the latent variables as well as the dummy variables that are included in Figure 3.1.

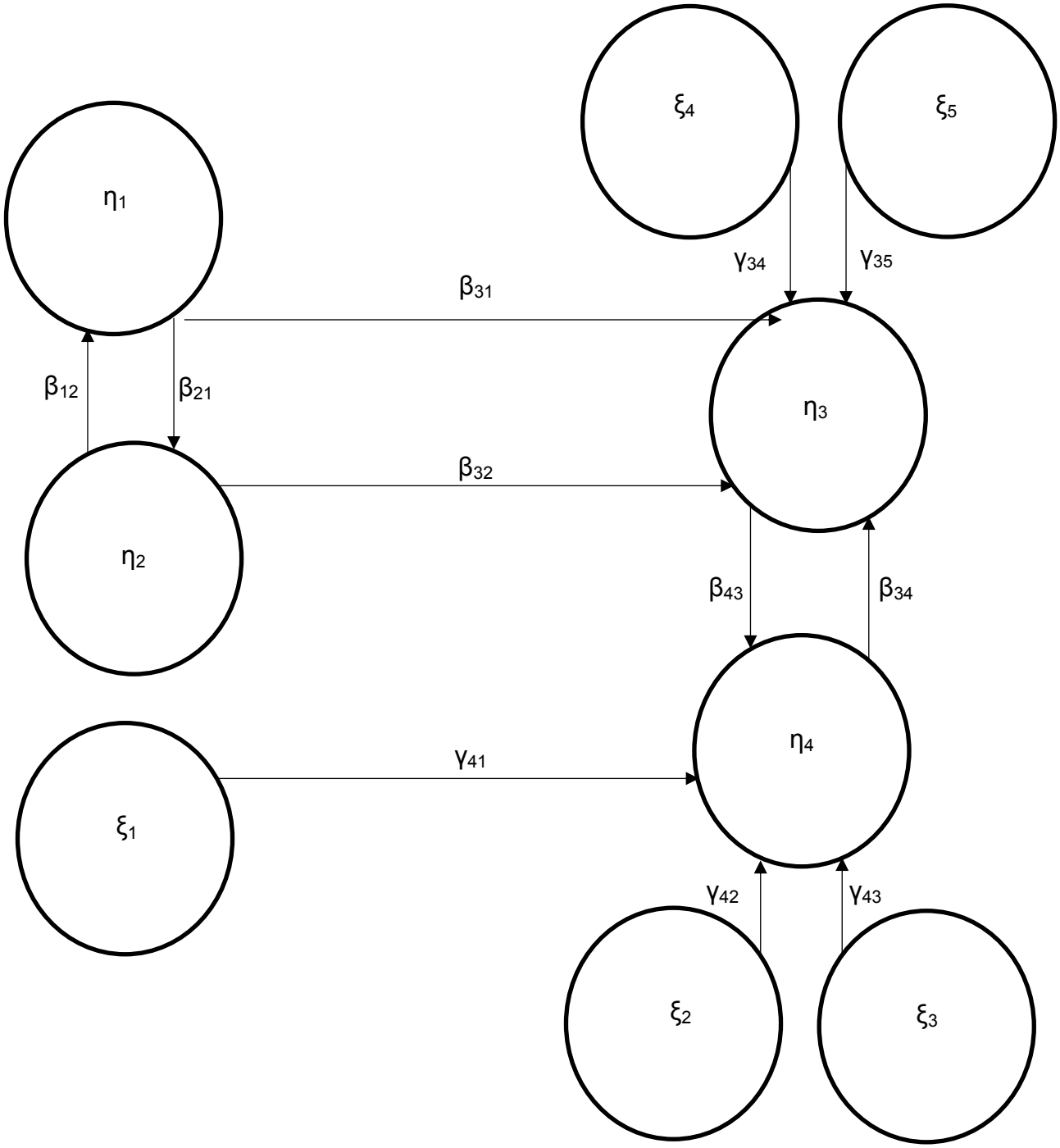

***Figure 3.1.*** **Structural model**

**Table 3.1**

***Summary of latent variables***

| | |
|---|---|
| $\eta_1$ | Job characteristics |
| $\eta_2$ | Calling |
| $\eta_3$ | Engagement |
| $\eta_4$ | Occupational health |
| $\xi_1$ | Job demands |
| $\xi_2$ | Job characteristics*Job demands *influence occupational health* |
| $\xi_3$ | Calling*Job demands *influence occupational health* |
| $\xi_4$ | Job demands*Calling *influences engagement* |
| $\xi_5$ | Job demands*Job characteristics *influence engagement* |

## 3.4 STATISTICAL HYPOTHESES

The statistical hypotheses presented in this section are representative of the logic underlying the structural model, the research design and the nature of the statistical analysis techniques associated with an *ex post facto* correlational design (Theron, 2014). The statistical analysis technique appropriate for the analysis of data from an *ex post facto* correlational design is SEM. The statistical hypotheses that can be correlated with the formulated hypotheses in Chapter 2 are depicted below. The statistical hypotheses were formulated by consulting the structural model illustrated as Figure 3.1.

**Hypothesis 1:**

$H_{01}$: $\beta_{43} = 0$

$H_{a1}$: $\beta_{43} > 0$

**Hypothesis 2:**

$H_{02}$: $\beta_{34} = 0$

$H_{a2}$: $\beta_{34} > 0$

**Hypothesis 3:**

$H_{03}$: $\beta_{31} = 0$

$H_{a3}$: $\beta_{31} > 0$

**Hypothesis 4:**

$H_{04}$: $\beta_{32} = 0$

$H_{a4}$: $\beta_{32} > 0$

**Hypothesis 5:**

$H_{05}$: $\beta_{21} = 0$

$H_{a5}$: $\beta_{21} > 0$

**Hypothesis 6:**

$H_{06}$: $\beta_{12} = 0$

$H_{a6}$: $\beta_{12} > 0$

**Hypothesis 7:**

$H_{07}$: $\gamma_{41} = 0$

$H_{a7}$: $\gamma_{41} > 0$

**Hypothesis 8:**

$H_{08}$: $\gamma_{42} = 0$

$H_{a8}$: $\gamma_{42} > 0$

**Hypothesis 9:**

$H_{09}$: $\gamma_{43} = 0$

$H_{a9}$: $\gamma_{43} > 0$

**Hypothesis 10:**

$H_{010}$: $\gamma_{35} = 0$

$H_{a10}$: $\gamma_{35} > 0$

**Hypothesis 11:**

$H_{011}$: $\gamma_{34} = 0$

$H_{a11}$: $\gamma_{34} > 0$

## 3.5 RESEARCH DESIGN

Any research inquiry includes a planning and an execution stage, in which the research design stipulates a plan for how the actual research and data collection will be carried out. The research design utilised to test the merit of the overarching and specific research hypotheses should be able to provide unambiguous scientific evidence to answer these questions. Furthermore, it is essential that the chosen research design be justified, seeing that the whole purpose of the scientific methodology is to achieve valid conclusions in relation to the truth of the hypotheses that are being studied (Theron, 2014). The design is not chosen randomly. Rather, it is the product of the type of research-initiating questions, research objectives and empirical evidence needed to test the hypotheses (Nell, 2015). Consequently, the research design, as part of the methodology, serves the epistemic ideal of science through the control mechanisms of rationality and objectivity (Theron, 2014).

The researcher made use of a cross-sectional study to collect data from the selected sample of SAPS employees in order to be able to make inferences about possible relationships and to gather data supporting further or previous research conducted. The researcher made use of a non-experimental *ex post facto* correlational design. According to Theron (2014), this research design is utilised when the relationships between variables are observed without the possibility of manipulation and/or control. There are two reasons for this that can serve as explanation: the researcher is not able to control or manipulate the variables, or the manifestation of the phenomena has already occurred. In short, participants are not randomly assigned and variables are not manipulated.

The aim of an *ex post facto* correlational design is to measure all the variables and determine how much variance in work engagement and occupational health can be explained by the other variables and their hypothesised relationships with engagement and occupational health. The nature of an *ex post facto* correlational design allows one to draw inferences from path coefficients that have been indicated to be significant. However, it should be borne in mind that correlations between variables do not necessarily suggest causation (Nell, 2015). Rather, significant correlations are evidence that one variable has a relationship with another but it cannot be inferred that the one influences (causes) the other.

This study relied on correlational techniques to determine the direction and strength of the hypothesised relationships. These techniques determine the degree to which the variables are closely related. According to Nell (2015), the advantages of correlational design include the following: it investigates research questions that cannot be explored by means of experimental procedures, and it allows one to determine the strength between variables. The disadvantage, however, is that it demonstrates correlation between variables and not causation (cause and effect).

*Ex post facto* data has certain weaknesses that are inherent in non-experimental data (Nell, 2015). Firstly, the researcher is not able to manipulate the independent variables. Secondly, the researcher has no power to randomise. Thirdly, poor interpretation of results is a potential pitfall.

Although this type of research design has weaknesses, it still can add value in that most research on variables in the field of industrial psychology and other social sciences cannot be manipulated. In this case, an *ex post facto* correlational design would be preferable to an experimental design, in which manipulation is usually done. Furthermore, an *ex post facto* correlational design is able to maximise systematic error variance, minimise error variance and control for extraneous variance through the researcher's attempts and the utilisation of certain techniques (Theron, 2014). Therefore, this design has the capacity to increase the likelihood of providing unambiguous empirical evidence against which hypotheses are tested.

## 3.6 RESEARCH PROCEDURE AND SAMPLING SIZE

Sampling involves the researcher selecting a subset or segment of the total population (Babbie & Mouton, 2001). In this study, the target population was SAPS employees. A population refers to a group of people whom one is interested in when studying a specific phenomenon and on which conclusions can be based (Warren, 2011). The SAPS consists of 194 852 employees, with 153 116 employees in service (i.e. not serving the public) and 41 736 in public service (i.e. employees serving the public). The SAPS consists of national management, top management, senior management and commissioned officers. The national management includes the Minister, Deputy Minister, executive authorities, the National Commissioner (General), the Secretary for Police, the Deputy National Commissioner (Lieutenant-General), the Provincial

Commissioner, the Divisional Commissioner and other top management. The Major General and Brigadier for each province are included as top management, whereas the colonels, major/lieutenant colonels and lieutenants/captains are referred to as senior management. The commissioned officers include the non-commissioned officers and Public Service Act employees (Department of Police, 2014).

An appointment was made with the Brigadier of Training in the Northern Cape, who also referred the researcher to the Head of Training in the Western Cape. Thereafter, the researcher needed to apply formally to conduct research in the SAPS. After consent had been granted by Head Office, the researcher contacted the station commanders at the police stations and the management of the head offices, who gave their consent for participation. It was then established that most of these facilities did not have internet access, and consequently the researcher needed to convert the online survey to a pen-and-paper version and hand deliver the questionnaires to the relevant police stations and head offices. After Stellenbosch University had granted ethical clearance, the online version was distributed to the heads of departments, who then distributed the questionnaires to their employees.

Due to the size of a population, it may be difficult to conduct an investigation of the entire population. Therefore, a sample can be drawn that includes a smaller representative group from which generalisations to the population can be made.

There are two types of techniques that researchers can choose from when sampling (Warren, 2011). These techniques are probability sampling (random, stratified, cluster and systematic sampling) and nonprobability sampling (quota, purposive, convenience and snowball sampling). When using probability sampling, each element in the sampling population has a known but not necessarily equal probability of being selected for the sample. Nonprobability sampling, in contrast, includes sampling procedures in which the probability of selection is unknown for each element of the sampling population. Although probability samples are preferable, they are not always practical or feasible (Warren, 2011).

The researcher made use of nonprobability sampling in the current study. More specifically, a convenience sampling design was employed, referring to a sampling

procedure of using individuals who are readily available (Salkind, 2010). According to Babbie and Mouton (2001), nonprobability convenience sampling involves the selection of subjects based on their convenient accessibility and proximity to the researcher. This technique was decided on due to organisational time constraints (limited time for data collection and limited amount of consented research endeavours on the part of the SAPS) as well as practical limitations (the survey was handed out as a paper copy seeing that many SAPS employees did not have access to the internet). No pressure was placed on the SAPS employees to complete the questionnaires, but the managers of each department and the station commanders were encouraged to motivate their employees to participate in the study in order to obtain the highest possible response rate.

It was decided that the SAPS employees situated in the Northern and Western Cape would be included for the purposes of this study, seeing that permission had been granted to conduct research on the SAPS in these two provinces. The Northern Cape SAPS is much smaller than that of the Western Cape, and the culture and type of employees situated in the Northern Cape differed from those situated in the Western Cape. This therefore enabled a reasonable comparison between provinces, and recommendations for the Northern Cape SAPS can be made based on the Western Cape SAPS's strengths and vice versa.

When sampling, the sample size should be carefully considered. Logically, the larger the sample size is, the more generalisable the conclusions will be (Theron, 2014). Therefore, it is crucial to determine an acceptable sample size before the study commences so as to ensure that the end results are generalisable. The minimum required size of a sample is 250, but due to the SAPS population being fairly large, it was decided that 250 employees from the Western Cape and 250 from the Northern Cape would be included. However, due to the data collection being done mostly with pen on paper, as has already been mentioned, it was decided that 800 questionnaires (of which 650 were to be completed by pen on paper and the remaining 150 electronically) would be distributed. Seeing that the researcher was based in the Western Cape, it was more feasible to distribute the pen-and-paper version in the Western Cape only. Of the 800 questionnaires that were distributed, 339 were completed, giving a response rate of 42.375%. The biographical information of the

participants who completed the questionnaire is reported in Table 3.2. A discussion of the measurement instruments that also formed part of the questionnaire follows.

## 3.7 MEASUREMENT INSTRUMENTS

Measurement instruments are intended to measure latent variables and should provide empirical evidence against which hypotheses can be tested. However, in order to come to valid and reliable conclusions after studying the obtained results, it is essential that the utilised instruments comprise the necessary psychometric properties (Theron, 2014).

A composite questionnaire consisting of questions from different existing questionnaires was compiled by the researcher. The composite self-administered questionnaire consisted of six sections. The first section dealt with the biographical information of the participants, while sections two to six measured the relevant variables. Five measures were utilised to measure the constructs for the purpose of this study, and a discussion of the nature, composition and psychometric properties of these measures follows. These five measures are 1) the Utrecht Work Engagement Scale (UWES-17) (Schaufeli & Bakker, 2003); 2) the General Health Questionnaire (GHQ-28) (Goldberg & Hillier, 1979); 3) the revised Job Diagnostic Survey (JDS) (Boonzaier et al., 2001); 4) the 12-item calling scale (Dobrow & Tosti-Kharas, 2011); and 5) the Police Stress Inventory (PSI) (Swanepoel & Pienaar, 2004).

### 3.7.1 Biographical information

The biographical information section included in the questionnaire was used to gather information about the demographic characteristics of the participants (including age, gender, ethnic group, marital status, language, education, monthly income, cluster, years in service, rank and province).

**Table 3.2**

***Biographical information of the sample population (N = 339)***

| | | |
|---|---|---|
| **Age** | | |
| Categories | Frequency | Percentage |
| Under 20 | 1 | 0% |
| 20–29 | 67 | 20% |
| 30–39 | 126 | 37% |
| 40–49 | 110 | 32% |
| 50–59 | 33 | 10% |
| 60–69 | 2 | 1% |
| **Gender** | | |
| Variables | Frequency | Percentage |
| Male | 172 | 51% |
| Female | 167 | 49% |
| **Ethnic group** | | |
| Variables | Frequency | Percentage |
| African | 90 | 27% |
| White | 103 | 30% |
| Indian | 2 | 1% |
| Coloured | 144 | 42% |
| **Marital status** | | |
| Variables | Frequency | Percentage |
| Married | 175 | 52% |
| Divorced | 20 | 6% |
| Single | 135 | 40% |
| Widowed | 6 | 2% |
| Other | 3 | 1% |
| **Language** | | |
| Variables | Frequency | Percentage |
| Afrikaans | 217 | 64% |
| English | 36 | 11% |
| IsiXhosa | 63 | 19% |

| | | |
|---|---|---|
| IsiZulu | 2 | 1% |
| Sesotho | 6 | 2% |
| Sepedi | 1 | 0% |
| Setswana | 3 | 1% |
| Other | 11 | 3% |

**Education/highest qualification**

| Variables | Frequency | Percentage |
|---|---|---|
| Primary school | 1 | 0% |
| High school but not matric | 6 | 2% |
| Matric | 219 | 65% |
| Diploma/certificate | 93 | 27% |
| Degree | 13 | 4% |
| Honours degree | 5 | 1% |
| Master's degree | 2 | 1% |

**Monthly income**

| Variables | Frequency | Percentage |
|---|---|---|
| R0–9 999 | 87 | 26% |
| R10 000–19 999 | 157 | 46% |
| R20 000–29 999 | 70 | 21% |
| R30 000–39 999 | 10 | 3% |
| R40 000–49 999 | 3 | 1% |
| R50 000 and above | 12 | 4% |

**Cluster (two missing values: N = 337)**

| Variables | Frequency | Percentage |
|---|---|---|
| Bellville | 135 | 39.8% |
| Caledon | 1 | .3% |
| Cape Town | 4 | 1.2% |
| Da Gamaskop | 8 | 2.4% |
| Delft | 5 | 1.5% |
| Galeshewe | 4 | 1.2% |
| George | 1 | .3% |
| Hope Town | 9 | 2.7% |
| Kraaifontein | 8 | 2.4% |

| | | |
|---|---|---|
| Kuilsrivier | 1 | .3% |
| Milnerton | 64 | 18.9% |
| Nyanga | 1 | .3% |
| Stellenbosch | 16 | 4.7% |
| Vredendal | 1 | .3% |
| Vredenburg | 2 | .6% |
| Wynberg | 1 | .3% |
| Calvinia | 28 | 8.3% |
| Carnarvon | 4 | 1.2% |
| De Aar | 8 | 2.4% |
| Kakamas | 1 | .3% |
| Kuruman | 2 | .6% |
| Kimberley | 15 | 4.4% |
| Pofadder | 1 | .3% |
| Springbok | 5 | 1.5% |
| Upington | 12 | 3.5% |

**Years in service**

| Minimum; maximum | Mean | Standard deviation |
|---|---|---|
| .4; 41 | 13.514 | 10.283 |

**Rank (two missing values: N = 337)**

| Variables | Frequency | Percentage |
|---|---|---|
| None | 35 | 10% |
| Constable | 134 | 40% |
| Sergeant | 42 | 12% |
| Warrant Officer | 57 | 17% |
| Lieutenant | 10 | 3% |
| Captain | 35 | 10% |
| Major | 1 | 0% |
| Lieutenant Colonel | 0 | 0% |
| Colonel | 14 | 4% |
| Brigadier | 3 | 1% |
| Other | 6 | 2% |

| Province | | |
|---|---|---|
| Variables | Frequency | Percentage |
| Western Cape | 252 | 75% |
| Northern Cape | 86 | 25% |

### 3.7.2 The Utrecht Work Engagement Scale

#### 3.7.2.1 Description of instrument

There are several instruments that have been designed to measure *work engagement*. However, the most well-known is a self-report questionnaire called the Utrecht Work Engagement Scale (UWES) (Schaufeli, Bakker & Salanova, 2006). This scale was designed predominantly to measure an individual's level of engagement in his/her work. It can also be used to determine the relationship between engagement, burnout and workaholism as well as possible causes and consequences of engagement (Schaufeli & Bakker, 2004).

Ultimately, the primary focus of the UWES is to determine, improve and regulate employee wellness in the workplace. The UWES includes the three constituting aspects of work engagement: vigour, dedication and absorption. By determining each employee's score on these three items, organisations can utilise this information in their human resource planning to facilitate person-job fit (i.e. jobs in which employees are productive and comfortable and in which the elements of the job complement their personality and personal resources) (Bakker & Demerouti, 2008).

The three components of the UWES are scored on a seven-point frequency rating scale, varying from 0 ("never") to 6 ("always/daily") (Schaufeli et al., 2006), and have been validated in many countries. The duration of this test varies from five to ten minutes, and it consists of statements regarding the individual's work. The UWES is administered in pencil-and-paper format, but it can also be distributed electronically and completed on a computer (Bakker & Demerouti, 2008).

Originally, the UWES included 24 items that measured vigour (nine items), dedication (eight items) and absorption (seven items). The results of psychometric evaluations conducted on employees and students suggested seven unsound items consequently eliminated from the UWES, which meant that 17 items remained. These remaining

items consisted of six vigour items, five dedication items and six absorption items (Schaufeli & Bakker, 2003). The scoring keys for the UWES-17 questionnaire are as follows:

Vigour is tested in questions 1, 4, 8, 12, 15 and 17. All the questions regarding vigour are scored positively, and consequently scoring high on questions 1, 4, 8, 12, 15 and 17 should provide an individual with a high score in vigour. An example of an item in the UWES that tests vigour reads, “At my work, I feel bursting with energy.”

Dedication is tested in questions 2, 5, 7, 10 and 13. All the questions regarding dedication are scored positively. Therefore, scoring high on questions 2, 5, 7, 10 and 13 should provide an individual with a high score in dedication. An example of an item in the UWES that tests dedication reads, “I find the work that I do full of meaning and purpose.”

Absorption is tested in questions 3, 6, 9, 11, 14 and 16. All the questions regarding absorption are scored positively. Thus, scoring high on questions 3, 6, 9, 11, 14 and 16 should provide an individual with a high score in absorption. An example of an item in the UWES that tests absorption reads, “Time flies when I’m working.”

However, De Bruin, Hill, Henn and Muller (2013) indicate that work engagement should be treated as a unidimensional construct: individual scores should be interpreted in a summative manner by combining the results into a single, global score. Consequently, this study interpreted a single global score of engagement.

#### 3.7.2.2 Previous findings on the psychometric properties of the Utrecht Work Engagement Scale

The UWES has been translated into many languages and used among many different occupational groups (Schaufeli et al., 2006). When focusing on the reliability of the UWES scales developed for other languages, one should look at two aspects: internal consistency (α) and test-retest reliability. The internal consistencies of the UWES-17 are provided in Table 3.3 below.

**Table 3.3**

***Cronbach's alphas of the UWES-17 subscales***

| Subscale | Cronbach's alpha |
|---|---|
| Vigour | .82 |
| Dedication | .89 |
| Absorption | .83 |
| Total of scale | .93 |

(Schaufeli & Bakker, 2003)

It is clear from Table 3.3 that the internal consistency of the three scales comprising the UWES-17 is satisfactory. The reason for this conclusion is that the Cronbach's alphas were found to be equal to or exceeding the critical value of .7, with values of between .8 and .9, as indicated in Table 3.3.

Furthermore, confirmatory factor analysis showed that the hypothesised three-factor structure of the UWES was superior to the one-factor model and well fitted to the data of various samples from the Netherlands, Spain and Portugal (Schaufeli & Bakker, 2003). These three factors are also closely related due to correlations between the three scales usually exceeding .65. Furthermore, correlations between the latent variables range from .8 to .9 (Schaufeli & Bakker, 2003).

### 3.7.3 The General Health Questionnaire

#### 3.7.3.1 Description of the instrument

The General Health Questionnaire (GHQ) is a self-administrated screening questionnaire designed for application in consulting settings. This questionnaire is aimed at detecting those with a diagnosable psychiatric disorder and concerns itself with two major classes of phenomena: the inability to carry out one's daily healthy functions and the appearance of new phenomena of a distressing nature (Goldberg & Hillier, 1979). Therefore, the main focus of the GHQ is the hinterland between psychological sickness and health.

There are a number of versions of the GHQ, and the full version requires any 12 symptoms from the set of 60 in order to identify a probable case. The most popular

GHQ versions utilised in studies include the GHQ-12, the GHQ-28 and the GHQ-30 (Werneke, Goldberg, Yalcin & Ustun, 2000). The GHQ-12 consists of an anxiety and depression domain, a social dysfunction domain and a loss of confidence and self-esteem domain. The GHQ-28 includes four subscales: somatic symptoms (seven items), anxiety and insomnia (seven items), social dysfunction (seven items) and severe depression (seven items). It was decided that the GHQ-28 would be used in the current study to measure occupational health, seeing that it has a sufficient number of items measuring each scale.

The four components of the GHQ-28 are scored on a four-point frequency rating scale, in which 1 includes responses “not at all/better than usual”, 2 includes responses “no more than usual/rather more than usual”, 3 includes responses “rather more than usual/worse than usual” and 4 includes responses “much more than usual/much worse than usual”. The GHQ-28 has been validated in many countries (Chan, 2013). The duration of this test is usually five minutes, and it consists of statements regarding the individual’s health. The GHQ-28 is administered in paper-and-pencil format, or it can be distributed electronically and completed on a computer (Chan, 2013). The scoring keys for the GHQ-28 questionnaire are as follows:

Somatic symptoms are tested in questions 1, 2, 3, 4, 5, 6 and 7. All the questions regarding somatic symptoms are scored positively, and consequently scoring high on questions 1, 2, 3, 4, 5, 6 and 7 should be interpreted as follows: the individual is experiencing various somatic symptoms and therefore poor occupational health. An example of an item in the GHQ-28 that tests somatic symptoms reads, “Have you recently been feeling perfectly well and in good health?”

Anxiety and insomnia are tested in questions 8, 9, 10, 11, 12, 13 and 14. All the questions regarding anxiety and insomnia are scored positively. Therefore, scoring high on questions 8, 9, 10, 11, 12, 13 and 14 should be interpreted as follows: the individual is experiencing high anxiety and insomnia and therefore poor occupational health. An example of an item in the GHQ-28 that tests anxiety and insomnia reads, “Have you recently had difficulty in staying asleep once you are off?”

Social dysfunction is tested in questions 15, 16, 17, 18, 19, 20 and 21. All the questions regarding social dysfunction are scored positively. Thus, scoring high on questions 15, 16, 17, 18, 19, 20 and 21 should be interpreted as follows: the individual is experiencing high social dysfunction and therefore poor occupational health. An example of an item in the GHQ-28 that tests social dysfunction reads, “Have you recently felt capable of making decisions about things?”

Severe depression is tested in questions 22, 23, 24, 25, 26, 27 and 28. All the questions regarding severe depression are scored positively. Thus, scoring high on questions 22, 23, 24, 25, 26, 27 and 28 should be interpreted as follows: the individual is experiencing severe symptoms of depression and therefore poor occupational health. An example of an item in the GHQ-28 that tests severe depression reads, “Have your recently felt that life is entirely hopeless?”

These subscales are then added together to produce a total score indicative of an individual’s general/occupational health. The present study treated occupational health as a one-dimensional construct and therefore focused on the *total* occupational health score.

#### 3.7.3.2 Previous findings on the psychometric properties of the General Health Questionnaire

According to Table 3.4, there are strong inter-correlations between the subscales of the GHQ-28, with all values being above .7. Furthermore, the validity coefficients of both the GHQ-12 and GHQ-28 were reported as high and well above .8. Goldberg and Hillier (1979) also reported that the GHQ was unbiased against gender, age and educational groups and could be applied fairly in both developing and developed countries. Therefore, it could be concluded that the GHQ showed sufficient psychometrically sound properties to be utilised for measuring occupational health in this study.

**Table 3.4**

***Cronbach's alphas of the GHQ-28 subscales***

| Subscale | Cronbach's alpha |
|---|---|
| Scale A | .84 |
| Scale B | .79 |
| Scale C | .79 |
| Scale D | .84 |
| Total of scale | .90 |

(Vallejo, Jordan, Diaz, Comeche & Ortega, 2007)

### 3.7.4 Revised Job Diagnostic Survey

#### 3.7.4.1 Description of the instrument

According to Boonzaier et al. (2001), the revised Job Diagnostic Survey (JDS) provides a direct measure of job characteristics. The revised JDS measures the five job characteristics of skill variety, task identity, task significance, autonomy and feedback. After measuring the job characteristics, a score reflecting the overall motivating potential of a job in terms of the five job characteristics is computed. The motivating potential score provides a single indicator of the representativeness of the five job characteristics within the evaluated job (Boonzaier et al., 2001).

The five job characteristics are measured on seven-point scales, ranging from 1 ("very inaccurate") to 7 ("very accurate"). The scoring keys for the revised JDS questionnaire are as follows:

Skill variety is tested in Question 3 of Section 1 and statements 1 and 4 of Section 2. All the questions and statements regarding skill variety are scored positively, and consequently scoring high on Question 3 of Section 1 and statements 1 and 4 of Section 2 should be interpreted as follows: the individual's job contains skill variety. An example of an item in the revised JDS that tests skill variety reads, "How much variety is there in your job? That is, to what extent does the job require you to do many different things at work, using a variety of your skills and talents?"

Task identity is tested in Question 2 of Section 1 and statements 2 and 7 of Section 2. All the questions and statements regarding task identity are scored positively. Therefore, scoring high on Question 2 of Section 1 and statements 2 and 7 of Section 2 should be interpreted as follows: the individual's job has task identity. An example of an item in the revised JDS that tests task identity reads, "To what extent does your job involve doing a 'whole' and identifiable piece of work? That is, is the job a complete piece of work that has an obvious beginning and end? Or is it only a small part of the overall piece of work, which is finished by other people or by automatic machines?"

Task significance is tested in Question 4 of Section 1 and statements 5 and 10 of Section 2. All the questions and statements regarding task significance are scored positively. Thus, scoring high on Question 4 of Section 1 and statements 5 and 10 of Section 2 can be interpreted as follows: the individual's job includes task significance. An example of an item in the revised JDS that tests task significance reads, "In general, how significant or important is your job? That is, are the results of your work likely to significantly affect the lives or well-being of other people?"

Autonomy is tested in Question 1 of Section 1 and statements 6 and 9 of Section 2. All the questions and statements regarding autonomy are scored positively. Thus, scoring high on Question 1 of Section 1 and statements 6 and 9 of Section 2 can be interpreted as follows: the individual's job comprises autonomy. An example of an item in the revised JDS that tests autonomy reads, "How much autonomy is there in your job? That is, to what extent does your job permit you to decide on your own how to go about doing the work?"

Feedback is tested in Question 5 of Section 1 and statements 3 and 8 of Section 2. All the questions and statements regarding feedback are scored positively. Thus, scoring high on Question 5 of Section 1 and statements 3 and 8 of Section 2 can be interpreted as follows: the individual's job includes feedback. An example of an item in the revised JDS that tests feedback reads, "To what extent does doing the job itself provide you with information about your work performance? That is, does the actual work itself provide clues about how well you are doing – aside from any 'feedback' co-workers or supervisors may provide?"

These scores are then combined into a motivating potential score, as mentioned earlier. The current study also made use of a total score for job characteristics.

#### 3.7.4.2 Previous findings on the psychometric properties of the revised Job Diagnostic Survey

According to Table 3.5, all the Cronbach's alphas are satisfactory, except for the task identity subscale. The overall reliability of the revised JDS is still satisfactory. Another study found that the alpha coefficients for the subscales ranged between .67 and .79. The five-factor structure of the revised JDS has been supported in various research findings (Boonzaier & Boonzaier, 1994; Buys, Olckers & Schaap, 2007). Therefore, it was concluded that the revised JDS could be utilised in the current study for measuring job characteristics.

**Table 3.5**

***Cronbach's alphas of the revised JDS subscales***

| Subscale | Cronbach's alpha |
|---|---|
| Skill variety | .71 |
| Task identity | .59 |
| Task significance | .66 |
| Autonomy | .66 |
| Feedback | .71 |

(Scott, Swortzel & Taylor, 2005)

According to Boonzaier and Boonzaier (1994), the revised JDS is suitable for usage within the South African population due to the accompanying South African norms that are provided. The revised JDS also satisfies the basic requirements of reliability and validity for utilisation in South Africa and can be used across different cultural groups (Vorster, Olckers, Buys & Schaap, 2005).

### 3.7.5 Twelve-item calling scale

#### 3.7.5.1 Description of the instrument

It has been determined that empirical studies of calling use measures that have not been subjected to full construct validity (Dobrow & Tosti-Kharas, 2011). Therefore, a

measurement instrument that showed psychometrically sound properties had to be identified for the purposes of this study.

A study conducted by Dobrow and Tosti-Kharas (2011) aimed at developing such a scale for measuring calling. This study was performed in four phases: phase 1 aimed to generate a pool of potential items; phase 2 focused on evaluating the new 12-item scale measure of calling for the psychometric properties of reliability, dimensionality and stability; phase 3 comprised assessing convergent and discriminant validity; and phase 4 aimed to examine the criterion-related validity of the scale.

The 12-item calling scale has no subscales, and all items are measured on a seven-point scale (in which 1 = “strongly disagree” and 7 = “strongly agree”). An example of an item included in the 12-item calling scale reads, “I am passionate about being an employee of the SAPS.” All the items measure calling, and therefore no scoring chart was included. The scores on the 12 items are added to produce a total score.

#### 3.7.5.2 Previous findings on the psychometric properties of the 12-item calling scale

The coefficient alpha estimates of reliability were .88, .90, .90 and .94 in samples 1 through 4 (Dobrow & Tosti-Kharas, 2011) respectively and also remained stable over subsequent time periods in samples 1 and 2. Seeing that the results of this study indicated alpha coefficients of above .7, it can be concluded that the 12-item calling scale shows reliability based on these coefficients.

Furthermore, Dobrow and Tosti-Kharas (2011) found average corrected item-total correlations ranging from .41 to .73 across samples (average item-total correlation = .63), which can be regarded as sufficiently high, while item means ranged from 2.53 to 6.56 across samples (average *M* = 5.01). Item means close to the midpoint of the response scale were also desirable across all four samples, and standard deviations for the items ranged from .80 to 2.07 across samples (average *SD* = 1.43), suggesting acceptable variance to support the inclusion of these items. These results from Dobrow and Tosti-Kharas (2011) thus indicate that the 12-item calling scale can be regarded as a reliable measure.

The 12-item calling scale also showed stability over time in both the short and long term. The calling scale has also been proven to be unbiased towards both age and gender groups (Dobrow & Tosti-Kharas, 2011). It also has been determined that the 12-item calling scale shows evidence of convergent, discriminant and criterion-related validity. Based on all the evidence that the 12-item calling scale has psychometrically sound properties, this scale could be implemented for the purposes of measuring calling in the current study.

### 3.7.6 The Police Stress Inventory

#### 3.7.6.1 Description of the instrument

Due to stress being the most prominent emotionally demanding factor within the SAPS, it was decided to measure only this factor's influence on the employees of the SAPS. It has already been identified that work stress consists of eight sources, namely role ambiguity, relationships, tools and equipment, job security, career advancement, lack of autonomy, work/home interface and workload. Therefore, a scale that measured these sources had to be included. The appropriate scale to measure work stress in this study was identified as the Police Stress Inventory (PSI), seeing that it focuses on specific police-related stressors.

The PSI focuses on common work situations that often may result in psychological strain and comprises three subscales: job demands (18 items), lack of job resources (17 items) and inherent police stressors (9 items) (Swanepoel & Pienaar, 2004). Job demands include aspects such as personal time, personal responsibility, unpleasant nature of administrative tasks and time spent at work. Lack of resources includes items related to the equipment used, opportunities for advancement, poor pay, lack of cooperation and motivation among officers and lack of staff. Inherent police stressors include aspects such as death (of either a civilian or fellow officer), having to deal with violent or potentially violent situations and having to handle conflict (Pienaar & Rothmann, 2006).

The PSI consists of 88 items, which are divided into 44 items measuring the intensity of stress on a nine-point scale (in which 0 = "low" and 9 = "high") and 44 items for which it is expected to rate the frequency of stress experienced over the past six

months on a nine-point scale (in which 0 = “low” and 9 = “high”) (Mostert & Joubert, 2005). The scoring keys for the PSI questionnaire are as follows:

Job demands are tested in questions 3, 9, 10, 17, 19, 24, 25, 28, 31, 32, 34, 35, 36, 37, 38, 40, 41 and 42. All the questions regarding job demands are scored positively, and consequently scoring high on questions 3, 9, 10, 17, 19, 24, 25, 28, 31, 32, 34, 35, 36, 37, 38, 40, 41 and 42 should be interpreted as follows: the individual is experiencing stress due to high job demands. An example of an item in the PSI that tests job demands reads, “Rate the intensity of stress currently caused by working overtime.”

Lack of job resources is tested in questions 1, 4, 5, 8, 13, 14, 15, 16, 18, 20, 22, 23, 26, 29, 30, 39 and 44. All the questions regarding lack of job resources are scored positively. Therefore, scoring high on questions 1, 4, 5, 8, 13, 14, 15, 16, 18, 20, 22, 23, 26, 29, 30, 39 and 44 should be interpreted as follows: the individual is experiencing stress due to a lack of job resources. An example of an item in the PSI that tests the lack of job resources reads, “Rate the intensity of stress currently caused by staff shortages.”

Inherent police stressors are tested in questions 2, 6, 7, 11, 12, 21, 27, 33 and 43. All the questions regarding inherent police stressors are scored positively. Thus, scoring high on questions 2, 6, 7, 11, 12, 21, 27, 33 and 43 should be interpreted as follows: the individual is experiencing stress due to the presence of inherent police stressors. An example of an item in the PSI that tests inherent police stressors reads, “Rate the intensity of stress currently caused by having to deal with the media.”

These subscales are then added together by combining the intensity and frequency score on each item to produce a total score indicative of an individual’s stress levels (i.e. job demands). The present study treated job demands (i.e. stress) as a one-dimensional construct and therefore focused on the *total* job demands score of the intensity combined with the frequency.

### 3.7.6.2 Previous findings on the psychometric properties of the Police Stress Inventory

It can be concluded from Table 3.6 that the Cronbach's alphas are all acceptable, since they are above .7. Therefore, it can be concluded that the PSI factors have internal consistency (Mostert & Joubert, 2005; Pienaar & Rothmann, 2006).

**Table 3.6**

***Cronbach's alphas of the PSI subscales***

| Subscale | Cronbach's alpha |
|---|---|
| Job demands | .92 |
| Lack of resources | .92 |
| Police stressors | .89 |

(Mostert & Joubert, 2005)

This inventory was also specifically developed for usage in the SAPS (Pienaar & Rothmann, 2006). Therefore, the PSI was utilised in this study to measure job demands (i.e. stress) among SAPS employees.

## 3.8 MISSING VALUES

The probability of encountering missing values is a rather big one when survey data is used and can be due to nonresponse and/or absenteeism (in the case of longitudinal designs) of participants. This can influence empirical results greatly if it is not dealt with before analysis of the data commences. According to Nell (2015), there are methods that can be utilised to address missing-value problems, depending on the number of missing values, the pattern of missing data as well as the nature of the data, for example normalised or non-normalised data. Methods to address the problems associated with missing values range from data deletion (list-wise deletion and pair-wise deletion) to data imputation (multiple imputations, imputation by matching and full information maximum likelihood imputation). Two missing values were found in the biographical information. However, these missing values did not influence the accuracy of the data analysis and therefore it was not necessary to address these missing values, as the two values were missing in the biographical information only (Table 3.2).

## 3.9 STATISTICAL ANALYSIS

### 3.9.1 Data analysis

The selection of data analysis techniques depends on the type of research questions that the study aims to answer. In this study, all data collected from the measurement instruments was analysed by a number of different quantitative techniques. These techniques included *item analyses* and *PLS/SEM.* The objective of data analysis is to test the structural model. A short explanation of the different quantitative techniques and programmes used in this study is provided below.

### 3.9.2 Computer package

Item analysis and PLS analysis methods were used to analyse the collected data. Statistica version 12 was used to perform the item analyses, which provided the reliabilities of the items and constructs. SmartPLS version 3 (M. Kidd, personal communication, 12 February 2016; Ringle, Wende & Becker, 2014) was used to test the relationships between the different variables, which aimed to provide the path coefficients between the variables and to estimate the PLS model.

### 3.9.3 Item analysis

A variety of scales can be used to test the latent variables. By using item analysis, the understanding of the validity and reliability of tests can be increased. A close examination of individual tests is critical when attempting to understand why some tests show specific levels of reliability and validity and others not (Tabachnick & Fidell, 2013).

Each item of a measurement instrument measures a specific aspect of an individual. Consequently, it is necessary that each measurement instrument include items that measure the actual latent variable or the dimensions of the latent variable that are supposed to be measured. Each variable carries a specific constitutive definition, and each item that is used to measure a specific variable must be in line with the constitutive definition of the variable. The items in each instrument have been developed to indicate the participants' standing on the specific latent variable and act as stimuli by aiming to elicit the participants' responses in terms of the behaviour of the underlying constructs. The item responses therefore record the behaviour that

underlies the construct and consequently make the behaviour 'observable' in the form of data (Little, 2013).

However, items can be poor at eliciting a response when they are insensitive, inconsistent or portray a poor interpretation of the construct (Theron, 2014). A process called item analysis can be used to identify poor items through item statistics by determining the quality and internal consistency reliability of the items of the respective scales. The literature suggests that reliabilities (Cronbach's alphas) of .70 or higher are sufficient (Little, 2013).

Depending on the results of the item analysis and the nature of the poor items (if such items are present), a decision should be made whether to transform or delete the items from the instrument or respective scale(s) (Theron, 2014). If the overall reliability of an instrument or subscale shows significant improvement after the selected items have been deleted, they are excluded from subsequent analyses. Cronbach's alphas and average inter-item correlations for each total scale were used for this purpose.

### 3.9.4 Partial least squares structural equation modelling analysis

The researcher made use of PLS modelling, which is a soft modelling approach and utilises partial least squares, in contrast to the hard modelling approach of SEM, which uses maximum likelihood (Monecke & Leisch, 2012). The motivation for using PLS modelling is its exploration and prediction value, as PLS path modelling is recommended at an early stage of theoretical development involving testing and validating exploratory models. PLS path modelling has another advantage in that it is suitable for prediction-orientated research. Consequently, PLS modelling can assist researchers in focusing on the explanation of endogenous constructs (Monecke & Leisch, 2012). Moreover, seeing that the PLS approach is distribution free, the data is not required to be normally distributed (Chin, 1998). This method could therefore easily accommodate both reflective and formative scales.

PLS models include two sets of linear equations, namely the outer model and the inner model. The outer model includes an analysis of the relationships between latent variables and their observed or manifest variables, whereas the inner model is aimed at analysing the relationships between unobserved or latent variables (Hair, Ringle &

Sarstedt, 2011). The outer model in PLS can be compared to the measurement model used in SEM, while the inner model in PLS can be compared to the structural model used in SEM.

However, before commencing with the PLS model estimation, a series of analyses needed to take place (Hair et al., 2011). Firstly, the reliability of the latent variables was evaluated. This was done by looking at the composite reliabilities, average variance extracted (AVE) and R-squares. If the coefficients exceeded .70, they were regarded as satisfactory (Hair et al., 2011). After the systematic evaluation of the reliabilities of the latent variables, the PLS estimates revealed the reliability and validity of the measurement model (i.e. the outer model) according to certain criteria associated with the measurement model.

Secondly, the structural model (i.e. the inner model) estimates needed to be evaluated once the calculated latent variable scores showed evidence of sufficient reliability and validity (Chin, 1998). The structural model (i.e. the inner model) relates latent variables to each other. In order to assess the significance of main effects and interaction effects, a bootstrapping sampling procedure was performed. After bootstrapping, the accuracy of the path estimates to the true effects was assessed.

Thirdly, moderating effects were analysed by using PLS path modelling. This process includes two steps: the iterative process, which is characterised by latent variable scores estimated for each latent variable, which are then entered as dependent and independent variables into one or more regressions, and the testing of moderating effects in multiple regression through PLS path modelling. When the researcher mentions moderating effects, it should be read in the context of PLS path modelling (i.e. the moderating relationships within the structural model). The researcher was interested in the moderating effect of latent variables on the direct relationships between latent variables (Hair et al., 2011).

## 3.10 RESEARCH ETHICS

The fundamental purpose of including a reflection on potential ethical risks associated with the research is protecting the dignity, rights, safety and well-being of the research participants. Consequently, the researcher consulted professional codes of ethics and guidelines for ethically responsible research that were applicable to the current study.

The present study could be considered a low-risk study, seeing that no serious potential risks or discomforts were related to it. However, a potential concern with the inclusion of the GHQ was that it included questions relating to a participant's general health that could have caused some discomfort when answering them. Seeing that the researcher did not want to negatively affect any employees who participated in the study because of the results of the study, it was ensured that the answers and profiles of individuals were kept anonymous. The individuals' anonymity was guaranteed, as only the researcher, the supervisor and the statistical analyst had access to the results, which were protected by a username and password (the pen-and-paper versions were collected and captured by the researcher). Moreover, any concerns that participants might have had regarding possible negative repercussions after completing the self-rated questionnaire were addressed by ensuring the confidentiality of the results.

Furthermore, the research participants had the right to decide voluntary whether to accept the invitation to participate in the research. There was no forced completion of any survey, and individuals made an informed decision on whether they wished to participate. Once again, the decision to accept or reject the invitation to participate was anonymous, and either agreeing or disagreeing to participate did not benefit or disadvantage any individual.

According to Annexure 12 of the Ethical Rules of Conduct for Practitioners Registered under the Health Professions Act 56 of 1974 (Republic of South Africa, 2006), the researcher was required to enter into an agreement with the participants based on the nature of the research, the participants' responsibilities as well as those of the researcher. The participants therefore were informed about:

(a) the objectives and purpose of the research;
(b) what participation in the research would involve;
(c) how the research results would be disseminated and used;
(d) who the researcher was;
(e) what her affiliation was;
(f) where they could make further inquiries about the research if they wished to do so;

(g) what their rights as participants were; and
(h) where they could obtain more information on their research rights.

The agreement in terms of which the research participants provided informed consent met the following requirements of Annexure 12 of the abovementioned act (Republic of South Africa, 2006, p. 77):

"(1) The researcher used language that was reasonably understandable to the research participant concerned in obtaining his/her informed consent.

(2) The informed consent was appropriately documented, and in obtaining such consent the researcher:

(a) informed the participant of the nature of the research;
(b) informed the participant that he/she was free to participate or decline to participate in or to withdraw from the research;
(c) explained the foreseeable consequences of declining or withdrawing;
(d) informed the participant of significant factors that could be expected to influence his/her willingness to participate;
(e) explained any other matters about which the participant enquired."

Furthermore, this study also involved the assessment of critical latent variables in relation to which the possibility of unusually high or low scores (specifically with regard to participants' levels of occupational health) could signal serious threats to the well-being of the research participants. Annexure 12 of the Ethical Rules of Conduct for Practitioners Registered under the Health Professions Act 56 of 1974 (Republic of South Africa, 2006, p. 59) requires researchers to disclose confidential information under the following circumstances:

"A psychologist researcher may disclose confidential information:

(a) only with the permission of the participant concerned;
(b) when permitted by law to do so for a legitimate purpose, such as providing a participant with the professional services required;
(c) to appropriate professionals and then for strictly professional purposes only; or
(d) to protect a participant or other persons from harm."

Consequently, the participants were provided with the contact details of an appropriately qualified professional who could be contacted if the need to do so

should have risen. This, however, did not suggest that the researcher or institution could be held responsible for the costs of treatment that could arise.

It can be concluded that no major ethical threats were posed by the study, seeing that the abovementioned procedures were introduced to ensure the protection and anonymity of the individuals. Consequently, the researcher was confident that all ethical and legal requirements had been complied with.

## 3.11 CHAPTER SUMMARY

Chapter 3 provided a description of the methodological choices that were made throughout the research process to obtain answers to the research-initiating questions and consequent hypotheses. In summary, an *ex post facto* correlational research design was used to collect primary data specifically for the purposes of this research study. Nonprobability convenience sampling was used to select an appropriate sample. Quantitative data was collected from police officers in the Western Cape and Northern Cape using a self-administered questionnaire as well as a pen-and-paper version. The researcher made use of the following instruments:

a. Utrecht Work Engagement Scale (UWES-17) (Schaufeli & Bakker, 2003).
b. General Health Questionnaire (GHQ-28) (Goldberg & Hillier, 1979).
c. Revised Job Diagnostic Survey (JDS) (Boonzaier et al., 2001).
d. Twelve-item calling scale (Dobrow & Tosti-Kharas, 2011).
e. Police Stress Inventory (PSI) (Swanepoel & Pienaar, 2004).

The collected data was analysed through item analysis and PLS modelling. The next chapter presents the research findings derived from the statistical analyses as well as their interpretation.

# CHAPTER 4

# RESULTS

## 4.1 INTRODUCTION

This chapter reports the results that were obtained after the data had been analysed according to the statistical methods discussed in Chapter 3. Item analysis was used to calculate the reliability of the different measures that were used to measure the latent variables (engagement, occupational health, job characteristics, calling and job demands). After performing item analysis, PLS (SEM) was used to provide supporting evidence of the reliability of the different measurements. In addition, PLS (SEM) was utilised to analyse and investigate the relevant paths between the latent variables in order to investigate structural model relationships, after two PLS models had been fitted.

Consequently, the purpose of this chapter is to present and discuss the statistical results of the various analyses that were performed for the purposes of this research study. Firstly, item analysis was performed to determine the psychometric soundness of the measurement instruments that were used to represent the various latent variables. Secondly, path analyses of the structural models were conducted to investigate structural model relationships. Lastly, the final scores and hypotheses were interpreted.

## 4.2 ITEM ANALYSIS: VALIDATING THE MEASUREMENT MODEL FIT

The item analysis provided a preliminary indication of the value of the subsequent statistical analyses. The validity and reliability criteria[1] normally depend on the nature of the constructs included in the study, whereas item correlations evaluate the consistency between items.[2] Item correlations are the subtype of internal consistency reliability.

[1] The validity and reliability criteria (Cronbach's alphas) adopted and applied in this study are considered satisfactorily, in other words ≥ .70 (Hair et al., 2011).

[2] Inter-item correlations are a subtype of internal consistency reliability. Values between 1.00 and > .50 are considered excellent. Values between .50 and > .00 indicate acceptable reliability (Tabachnick & Fidell, 2013).

Item analysis was performed on all items included in the composite questionnaire that was used during data collection. The item analysis summary can be found in Table 4.1, and it includes the Cronbach's alpha and average inter-item correlation of *all the total scales*. Item analysis was not performed on the subscales, seeing that this research study only made use of total scores.

**Table 4.1**

***Internal consistency reliabilities of scales***

| Scale | Sample size | Number of items | Mean | Standard deviation | Cronbach's alpha | Average inter-item correlation |
|---|---|---|---|---|---|---|
| WE | 339 | 17 | 92.27 | 21.62 | .95 | .55 |
| OH | 339 | 28 | 46.07 | 15.73 | .95 | .44 |
| JC | 339 | 15 | 76.79 | 19.09 | .93 | .50 |
| C | 339 | 12 | 60.06 | 20.33 | .98 | .78 |
| JD | 339 | 44 | 864.20 | 809.05 | .97 | .45 |

WE = Work engagement; OH = Occupational health; JC = Job characteristics; C = Calling; JD = Job demands

### 4.2.1 Engagement

The Utrecht Work Engagement Scale (UWES-17) obtained a Cronbach's alpha coefficient of .95, which indicates high internal consistency reliability.[3] The UWES-17 scale consists of three subscales/dimensions, namely vigour, dedication and absorption. None of the individual items affected the coefficient negatively, and therefore no items were deleted.

The internal consistency was supported by an average inter-item correlation[4] of .55. This can be regarded as an exceptionally good average inter-item correlation. Overall, the results show that the UWES-17 measures what it is supposed to measure.

[3] According to Hair et al. (2011), composite reliability should be higher than .7 to be regarded as an indication of high internal consistency reliability.

[4] Ideally, the average inter-item correlation should be .3 or higher (Netemeyer, 2001).

### 4.2.2 Occupational health

The General Health Questionnaire (GHQ-28) obtained a Cronbach's alpha coefficient of .95, which is an indication of high internal consistency reliability. The GHQ-28 comprises four subscales: somatic symptoms, anxiety and insomnia, social dysfunction and severe depression. None of the individual items affected the coefficient negatively, and therefore no items were deleted.

The internal consistency was supported by an average inter-item correlation of .44, which can be regarded as satisfactory. These results show that the GHQ-28 measures what it is intended to measure.

### 4.2.3 Job characteristics

The revised Job Diagnostic Survey (JDS) obtained a Cronbach's alpha coefficient of .93, which serves as evidence of high internal consistency reliability. The revised JDS has five subscales: skill variety, task identity, task significance, autonomy and feedback. None of the individual items affected the coefficient negatively, and therefore no items were deleted.

The internal consistency was supported by an average inter-item correlation of .50, which can be regarded as satisfactory. These results show that the revised JDS measures what it is supposed to measure.

### 4.2.4 Calling

The 12-item calling scale obtained a Cronbach's alpha coefficient of .98, thus providing evidence of high internal consistency reliability. The calling scale has no subscales.

The internal consistency was supported by an average inter-item correlation of .78, which can be regarded as very satisfactory. These results show that the calling scale measures what it is supposed to measure.

### 4.2.5 Job demands

The Police Stress Inventory (PSI) obtained a Cronbach's alpha coefficient of .97, which indicates high internal consistency reliability. The PSI has three subscales: job demands, lack of job resources and inherent police stressors. None of the individual items affected the coefficient negatively, and therefore no items were deleted.

The internal consistency was supported by an average inter-item correlation of .45, which can be regarded as satisfactory. These results show that the PSI measures what it is supposed to measure.

### 4.2.6 Decision regarding the reliability of latent variable scales

The purpose of the foregoing item analysis was to evaluate the functioning of each of the latent variables and to assess the psychometric integrity of the indicator variables of the latent variables. The results of the item analysis provided satisfactory evidence to support the inclusion of the items in the measurement instruments. All items were found to be internally consistent and reliable at an acceptable level, as the Cronbach's alpha coefficients were above .70 (Hair et al., 2011). Considering that the researcher did not detect any poor items, no deletions were made. These results were corroborated by the satisfactorily high average inter-item correlations obtained for each total scale. The average inter-item correlations of the scales ranged between .44 and .78, and it can be concluded that these results are acceptable. The final conclusion was that the results of the item analysis were satisfactory and therefore warranted the subsequent analyses.

## 4.3 PARTIAL LEAST SQUARES ANALYSIS

A two-step process is recommended when the PLS approach to structural equation modelling is utilised (Hair et al., 2011). The first step involves evaluating the measurement model (often referred to as the outer model in PLS), which is then followed by the evaluation of the structural model (often referred to as the inner model in PLS). Here the structural model refers to the structural component of the model. The main purpose of the evaluation of the measurement model is to determine the measurement quality of the construct that will be used in the evaluation of the inner model. After the reliability of each latent variable scale has been established, path coefficients are examined to determine the strength and significance of the

hypothesised relationships. Thereafter, the significance of the paths between the variables can be tested and evaluated in order to confirm the structural model relationships.

### 4.3.1 Evaluation and interpretation of the measurement model

The purpose of the reliability analysis is to examine the reliability of the latent variable scales. The composite reliability and average variance extracted (AVE) were used for the evaluation and interpretation of the reliabilities of each latent variable. The composite reliability value measures whether the reliability of the latent variable scales is satisfactory. When the composite reliability value is equal to or higher than .70, it is deemed satisfactory (Hair et al., 2011). The reliability scores of all the latent variables were found to be > .70 and thus can be concluded to be satisfactory.

The AVE score can be compared to the other reliability scores, although the AVE is a stricter measure of reliability. The AVE value measures the amount of variance in the indicator variables, explained by common factors. A score of above .50 indicates that the indicator variables do indeed measure the relevant construct (Amaro, Seabra & Abrantes, 2015). The AVE values for *most* of the latent variables were equal to or above .50, which indicates that these constructs explained more than 50% of the variance in the items. The reliability statistics can be found in Table 4.2.

**Table 4.2**

***Reliability statistics of the PLS model***

| Scale | Composite reliability | AVE |
|---|---|---|
| WE | .96 | .58 |
| OH | .96 | .47 |
| JC | .94 | .52 |
| C | .98 | .79 |
| JD | .97 | .46 |

WE = Work engagement; OH = Occupational health; JC = Job characteristics; C = Calling; JD = Job demands

In order to establish the *construct validity*, additional analyses were performed. Construct validity refers to the degree to which a scale measures what it is supposed

to measure. The *discriminant validity* of each scale was also tested using the Fornel Laker criteria. All the scales passed the test, thus indicating that each scale used in this research study had discriminant validity.

The last evaluation that needs to be conducted when assessing the reliability of the items included in the latent variable scales was done by conducting a PLS bootstrap analysis. Bootstrapping was conducted in order to determine whether the outer loadings were significant or not. This was performed by looking at whether zero fell within the 95% confidence interval. If zero falls within the interval, the outer loadings are not statistically significant; if zero does not fall within this interval, the outer loadings are significant.

Table 4.3 illustrates the strength of the relationships between the latent variables and the relevant items measuring them in the questionnaire. It can be concluded that the paths between the items and their relevant latent variables, namely work engagement, occupational health, job characteristics, calling and job demands, are all statistically significant. These results are indicated by zero not falling within the 95% confidence interval. This confirms the reliability of each item included in the latent variable scales.

**Table 4.3**

***Outer loadings***

| Latent variables | Path | Original sample | 95% confidence interval (lower) | 95% confidence interval (upper) | Significant |
|---|---|---|---|---|---|
| **Work engage-ment** | WE1 ← Work engagement | .695 | .623 | .755 | Significant |
| | WE2 ← Work engagement | .753 | .677 | .823 | Significant |
| | WE3 ← Work engagement | .648 | .550 | .740 | Significant |
| | WE4 ← Work engagement | .830 | .771 | .875 | Significant |
| | WE5 ← Work engagement | .855 | .855 | .910 | Significant |
| | WE6 ← Work engagement | .606 | .519 | .684 | Significant |
| | WE7 ← Work engagement | .864 | .822 | .898 | Significant |
| | WE8 ← Work engagement | .851 | .811 | .855 | Significant |
| | WE9 ← Work engagement | .862 | .812 | .900 | Significant |
| | WE10 ← Work engagement | .868 | .828 | .898 | Significant |
| | WE11 ← Work engagement | .722 | .685 | .843 | Significant |

| | | | | | |
|---|---|---|---|---|---|
| | WE12 ← Work engagement | .751 | .655 | .825 | Significant |
| | WE13 ← Work engagement | .721 | .638 | .788 | Significant |
| | WE14 ← Work engagement | .712 | .634 | .783 | Significant |
| | WE15 ← Work engagement | .734 | .655 | .803 | Significant |
| | WE16 ← Work engagement | .573 | .472 | .656 | Significant |
| | WE17 ← Work engagement | .675 | .590 | .758 | Significant |
| **Occupa-** | OH1 ← Occupational health | .483 | .372 | .587 | Significant |
| **tional** | OH2 ← Occupational health | .696 | .605 | .765 | Significant |
| **health** | OH3 ← Occupational health | .739 | .658 | .799 | Significant |
| | OH4 ← Occupational health | .750 | .671 | .814 | Significant |
| | OH5 ← Occupational health | .714 | .630 | .779 | Significant |
| | OH6 ← Occupational health | .751 | .663 | .809 | Significant |
| | OH7 ← Occupational health | .676 | .573 | .753 | Significant |
| | OH8 ← Occupational health | .787 | .715 | .845 | Significant |
| | OH9 ← Occupational health | .775 | .712 | .825 | Significant |
| | OH10 ← Occupational health | .839 | .799 | .873 | Significant |
| | OH11 ← Occupational health | .813 | .759 | .856 | Significant |
| | OH12 ← Occupational health | .791 | .720 | .843 | Significant |
| | OH13 ← Occupational health | .861 | .822 | .888 | Significant |
| | OH14 ← Occupational health | .851 | .813 | .885 | Significant |
| | OH15 ← Occupational health | .430 | .304 | .530 | Significant |
| | OH16 ← Occupational health | .677 | .596 | .741 | Significant |
| | OH17 ← Occupational health | .689 | .610 | .764 | Significant |
| | OH18 ← Occupational health | .632 | .551 | .703 | Significant |
| | OH19 ← Occupational health | .616 | .519 | .692 | Significant |
| | OH20 ← Occupational health | .597 | .503 | .678 | Significant |
| | OH21 ← Occupational health | .751 | .687 | .802 | Significant |
| | OH22 ← Occupational health | .625 | .499 | .727 | Significant |
| | OH23 ← Occupational health | .560 | .412 | .682 | Significant |
| | OH24 ← Occupational health | .513 | .368 | .637 | Significant |
| | OH25 ← Occupational health | .342 | .208 | .481 | Significant |
| | OH26 ← Occupational health | .603 | .496 | .691 | Significant |
| | OH27 ← Occupational health | .499 | .374 | .618 | Significant |
| | OH28 ← Occupational health | .445 | .316 | .575 | Significant |
| **Job** | JC1 ← Job characteristics | .528 | .408 | .632 | Significant |
| **charac-** | JC2 ← Job characteristics | .552 | .433 | .649 | Significant |
| **teristics** | JC3 ← Job characteristics | .550 | .440 | .638 | Significant |
| | JC4 ← Job characteristics | .639 | .548 | .713 | Significant |
| | JC5 ← Job characteristics | .592 | .481 | .680 | Significant |
| | JC6 ← Job characteristics | .778 | .704 | .830 | Significant |

| | | | | | |
|---|---|---|---|---|---|
| | JC7 ← Job characteristics | .778 | .699 | .843 | Significant |
| | JC8 ← Job characteristics | .778 | .690 | .845 | Significant |
| | JC9 ← Job characteristics | .837 | .789 | .876 | Significant |
| | JC10 ← Job characteristics | .772 | .709 | .826 | Significant |
| | JC11 ← Job characteristics | .797 | .734 | .844 | Significant |
| | JC12 ← Job characteristics | .763 | .667 | .834 | Significant |
| | JC13 ← Job characteristics | .808 | .751 | .855 | Significant |
| | JC14 ← Job characteristics | .791 | .735 | .841 | Significant |
| | JC15 ← Job characteristics | .764 | .677 | .835 | Significant |
| **Calling** | C1 ← Calling | .873 | .839 | .903 | Significant |
| | C2 ← Calling | .902 | .862 | .933 | Significant |
| | C3 ← Calling | .917 | .894 | .937 | Significant |
| | C4 ← Calling | .886 | .856 | .911 | Significant |
| | C5 ← Calling | .845 | .812 | .894 | Significant |
| | C6 ← Calling | .907 | .874 | .935 | Significant |
| | C7 ← Calling | .903 | .872 | .932 | Significant |
| | C8 ← Calling | .911 | .873 | .940 | Significant |
| | C9 ← Calling | .878 | .829 | .920 | Significant |
| | C10 ← Calling | .879 | .837 | .915 | Significant |
| | C11 ← Calling | .810 | .754 | .861 | Significant |
| | C12 ← Calling | .935 | .914 | .952 | Significant |
| **Job** | JD1 ← Job demands | .633 | .561 | .746 | Significant |
| **demands** | JD2 ← Job demands | .334 | .216 | .463 | Significant |
| | JD3 ← Job demands | .471 | .348 | .594 | Significant |
| | JD4 ← Job demands | .678 | .606 | .736 | Significant |
| | JD5 ← Job demands | .759 | .695 | .817 | Significant |
| | JD6 ← Job demands | .473 | .349 | .607 | Significant |
| | JD7 ← Job demands | .484 | .370 | .611 | Significant |
| | JD8 ← Job demands | .684 | .602 | .748 | Significant |
| | JD9 ← Job demands | .747 | .674 | .801 | Significant |
| | JD10 ← Job demands | .669 | .565 | .753 | Significant |
| | JD11 ← Job demands | .643 | .537 | .721 | Significant |
| | JD12 ← Job demands | .646 | .537 | .742 | Significant |
| | JD13 ← Job demands | .703 | .627 | .759 | Significant |
| | JD14 ← Job demands | .685 | .603 | .759 | Significant |
| | JD15 ← Job demands | .752 | .670 | .817 | Significant |
| | JD16 ← Job demands | .613 | .522 | .685 | Significant |
| | JD17 ← Job demands | .451 | .331 | .581 | Significant |
| | JD18 ← Job demands | .769 | .701 | .828 | Significant |
| | JD19 ← Job demands | .814 | .761 | .862 | Significant |

| | | | | |
|---|---|---|---|---|
| JD20 ← Job demands | .700 | .613 | .762 | Significant |
| JD21 ← Job demands | .492 | .374 | .612 | Significant |
| JD22 ← Job demands | .762 | .690 | .816 | Significant |
| JD23 ← Job demands | .820 | .762 | .865 | Significant |
| JD24 ← Job demands | .479 | .356 | .602 | Significant |
| JD25 ← Job demands | .836 | .776 | .878 | Significant |
| JD26 ← Job demands | .754 | .678 | .812 | Significant |
| JD27 ← Job demands | .537 | .448 | .625 | Significant |
| JD28 ← Job demands | .744 | .665 | .809 | Significant |
| JD29 ← Job demands | .782 | .713 | .835 | Significant |
| JD30 ← Job demands | .758 | .670 | .829 | Significant |
| JD31 ← Job demands | .817 | .762 | .862 | Significant |
| JD32 ← Job demands | .817 | .754 | .864 | Significant |
| JD33 ← Job demands | .343 | .226 | .471 | Significant |
| JD34 ← Job demands | .689 | .590 | .764 | Significant |
| JD35 ← Job demands | .769 | .695 | .828 | Significant |
| JD36 ← Job demands | .754 | .701 | .796 | Significant |
| JD37 ← Job demands | .820 | .758 | .871 | Significant |
| JD38 ← Job demands | .741 | .660 | .804 | Significant |
| JD39 ← Job demands | .768 | .694 | .827 | Significant |
| JD40 ← Job demands | .793 | .713 | .853 | Significant |
| JD41 ← Job demands | .483 | .377 | .894 | Significant |
| JD42 ← Job demands | .692 | .590 | .773 | Significant |
| JD43 ← Job demands | .373 | .258 | .497 | Significant |
| JD44 ← Job demands | .756 | .687 | .813 | Significant |

WE = Work engagement; OH = Occupational health; JC = Job characteristics; C = Calling; JD = Job demands

Consequently, as has already been mentioned, the results indicate that all the latent variable scales are deemed statistically significant. This confirms the reliability of the items included in these latent variable scales.

### 4.3.2 Evaluation and interpretation of the structural model

The structural model was analysed in order to determine the quality of the relationships between the latent variables that were used in the questionnaire. Consequently, the objective of the PLS structural model analysis was to determine to what extent the latent variables were related to one another. The relationship between the exogenous and endogenous variables as well as the influence of the exogenous

variables on the endogenous variables and the endogenous variables on one another were determined. As already mentioned, the structural model is also known as the 'inner model', since it determines factors inside the structural model (Hair et al., 2011). The analysis of the structural model included testing for multicollinearity, evaluation of the R-squares as well as evaluating and interpreting the main and moderating effects.

It is worth mentioning at this point that two PLS models were fitted, seeing that PLS modelling does not permit recursive relationships in the structural model (i.e. no causal loops). Consequently, the structural paths between latent constructs can only head in a single direction (Hair et al., 2011). The conceptual model (Figure 2.2) on which this study is based comprises two causal loops, one between calling and job characteristics and the other between engagement and occupational health. When the separate PLS models were fitted, it was found that the simultaneous relationships in which calling affects job characteristics and job characteristics affect calling were identical, and therefore only two separate PLS models were fitted to take into account the simultaneous relationships in which engagement affects occupational health and occupational health affects engagement. These two PLS models are illustrated as Figure 4.1 and Figure 4.2 respectively.

The model in Figure 4.1 illustrates, among others, the relationship between engagement and occupational health, with the hypothesis being that engagement affects occupational health. The blue circles indicate the latent variables (engagement, occupational health, job characteristics, calling and job demands), whereas the green circles indicate the moderating effects illustrated in the conceptual model (Figure 2.2).

Three latent variables that are hypothesised to moderate relationships between certain variables are included in the conceptual model (Figure 2.2). These moderating variables are job characteristics, calling and job demands (i.e. stress). Firstly, in Figure 4.1, the hypothesis that job demands (i.e. stress) moderate the relationship between job characteristic and engagement is captured as the first green circle (JC_stress_Eng). Secondly, the hypothesis that job demands (i.e. stress) moderate the relationship between calling and engagement is captured as the second green circle (calling_stress_Eng). Thirdly, the hypothesis that job characteristics moderate

the relationship between job demands (i.e. stress) and occupational health is captured as the third green circle (stress_JC_OH). Lastly, the hypothesis that calling moderates the relationship between job demands (i.e. stress) and occupational health is captured as the fourth green circle (stress_calling_OH).

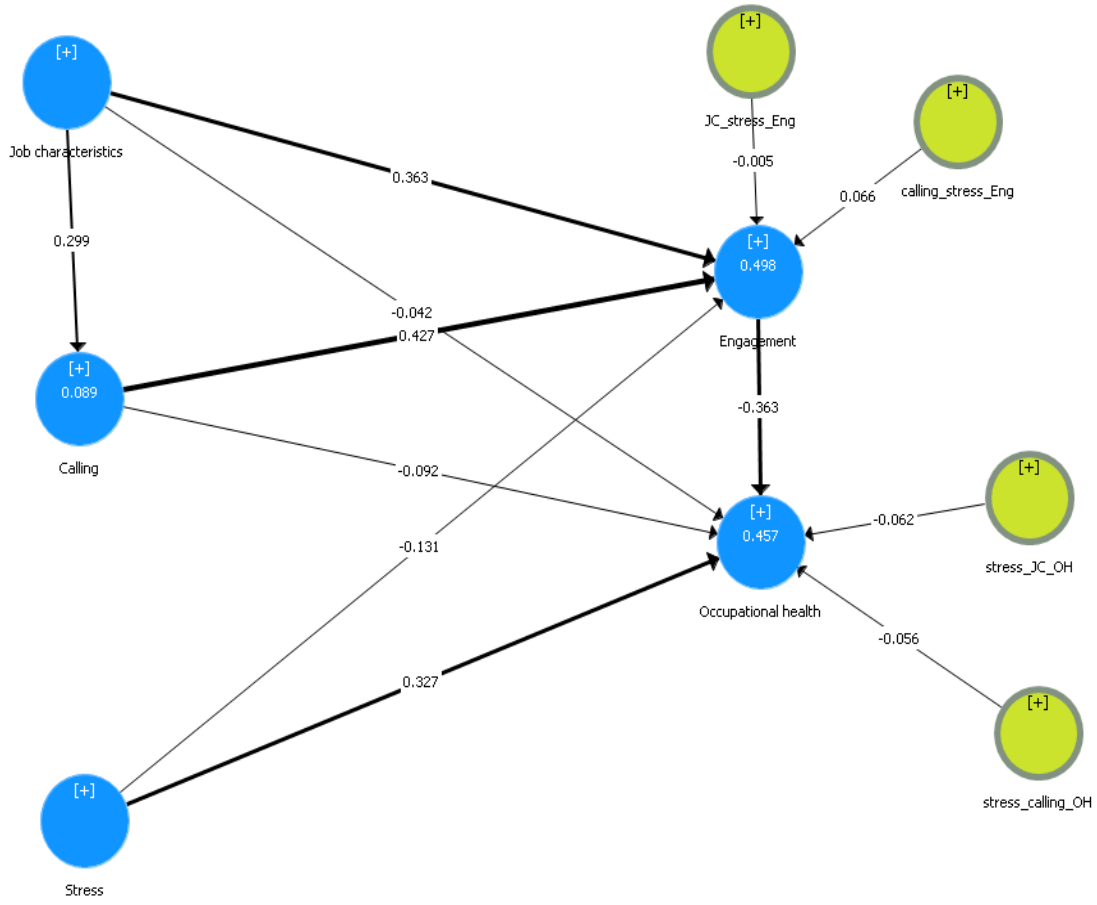


***Figure 4.1.*** **PLS model 1**

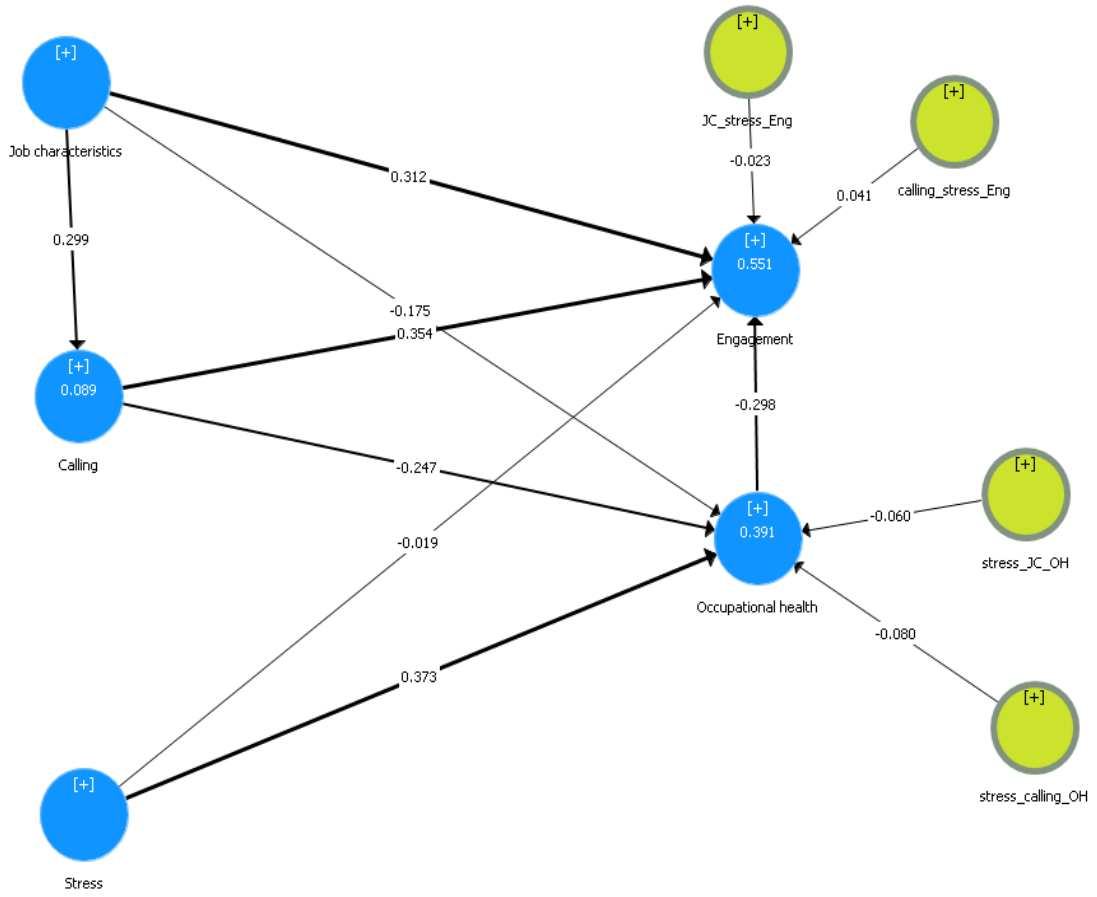


***Figure 4.2.*** **PLS model 2**

Figure 4.2, in contrast, illustrates the hypothesis, among other hypotheses, that occupational health affects engagement. Again the blue circles represent the latent variables included in the conceptual model (Figure 2.2), and the green circles represent the moderating effects as discussed earlier.

#### 4.3.2.1 Multicollinearity

When regression analysis is conducted, numerous predictor variables are present and it should be assumed that all the predictors are not correlated with each other. Occasionally it can happen that the predictors are correlated too highly with one another, which will then result in unstable regressions determined by estimated coefficients.

The researcher tested for multicollinearity using a variance inflation factor (VIF). VIFs measure the degree to which the variance of the estimated regression coefficients is inflated compared to a case in which the predictor variables are not linearly related (M. Kidd, personal communication, 12 February 2016). This information is used to describe how much multicollinearity (correlation between predictors) exists in a regression analysis. However, it is worth mentioning that multicollinearity is problematic seeing that it can increase the variance of the regression coefficients, thus resulting in unstable regression coefficients that are difficult to interpret.

Various recommendations for acceptable levels of VIF exist in the literature, and a recommended maximum VIF value of five seems to be most commonly used (Hair et al., 2011). Therefore, a maximum VIF value of five or higher was considered problematic in the present study (M. Kidd, personal communication, 12 February 2016). It was found that all the scores in both PLS models were below five; therefore, no indication of multicollinearity problems was found.

#### 4.3.2.2 Evaluation and interpretation of the R-square

The R-square value can be utilised to determine how much variance in the endogenous variables is explained by the full model. Table 4.4 contains a summary of the R-square scores for the endogenous variables. Seeing that the R-squares for the models depicted in Figure 4.1 and Figure 4.2 differ, both models are reported on.

**Table 4.4**

***R-square scores for the endogenous variables***

| | R-square for PLS model 1 | R-square for PLS model 2 |
|---|---|---|
| Work engagement | .498 | .551 |
| Occupational health | .457 | .391 |
| Calling | .089 | .089 |

The work engagement score was .498 in model 1 (Figure 4.1) and increased slightly to .551 in model 2 (Figure 4.2). This indicates that 49.8% of the variance in work engagement could be explained by the effect of exogenous variables in model 1, whereas this increased to 51.1% in model 2. Moreover, 45.7% of the variance in

occupational health could be explained by the effect of exogenous variables in model 1, whereas it decreased to 39.1% in model 2. The calling score of .089 in models 1 and 2 is relatively lower than the scores of work engagement and occupational health. This indicates that almost 8.9% of the variance in calling could be explained by the effect of exogenous variables. The low score is an indication that there are possible other variables that could have had an impact on the endogenous variable that were not measured in this study.

#### 4.3.2.3 Evaluation and interpretation of the main effects

It is important to note that the purpose of PLS path modelling is not to test a theory but to facilitate prediction (Hair et al., 2011). After the reliability of each latent variable scale had been established, path coefficients were examined to determine the strength and significance of the hypothesised relationships. In order to determine significance between variables, the bootstrapping method was used (Awang, Afthanorhan & Asri, 2015). According to this method, when zero falls within the confidence interval, the corresponding coefficient will be insignificant, and vice versa.

In Table 4.5 and Table 4.6, it is indicated whether the path coefficients in PLS model 1 (Figure 4.1) and PLS model 2 (Figure 4.2) respectively were significant or not. In order to determine the strength and significance of the hypothesised paths as proposed in the structural model (Figure 3.1), path coefficients were investigated by determining whether zero fell within the 95% confidence interval, as explained earlier. The significance of the path coefficients was investigated, and information on whether the hypothesised paths were significant was provided for each path. The researcher again wants to mention that the findings were identical for the causal loops between calling and job characteristics, and therefore only one PLS model was fitted to test these reciprocal hypotheses. Consequently, the reader needs to bear in mind that the results of the hypothesis that job characteristics influence calling ($H_{05}$) are identical to the results of the hypothesis that calling affects job characteristics ($H_{06}$).

**Table 4.5**

***Path coefficients between variables in PLS model 1***

| Path | Path coefficient | 95% confidence interval (lower) | 95% confidence interval (upper) | Description |
|---|---|---|---|---|
| H1: WE → OH | -.36 | -.53 | -.21 | Significant |
| H3: JC → WE | .36 | .28 | .46 | Significant |
| H4: C → WE | .43 | .32 | .52 | Significant |
| H5: JC → C | .30 | .19 | .42 | Significant |
| H6: C → JC | .30 | .19 | .42 | Significant |
| H7: JD → OH | .38 | .23 | .42 | Significant |

WE = Work engagement; OH = Occupational health; JC = Job characteristics; C = Calling; JD = Job demands

**Table 4.6**

***Path coefficients between variables in PLS model 2***

| Path | Path coefficient | 95% confidence interval (lower) | 95% confidence interval (upper) | Description |
|---|---|---|---|---|
| H2: OH → WE | -.2 | -.41 | -.19 | Significant |
| H3: JC → WE | .31 | .22 | .41 | Significant |
| H4: C → WE | .35 | .24 | .45 | Significant |
| H5: JC → C | .30 | .19 | .42 | Significant |
| H6: C → JC | .30 | .19 | .42 | Significant |
| H7: JD → OH | .37 | .29 | .47 | Significant |

WE = Work engagement; OH = Occupational health; JC = Job characteristics; C = Calling; JD = Job demands

**Hypothesis 1:** Engagement ($\eta_3$) has a significant positive effect on occupational health ($\eta_4$) among SAPS employees.

The hypothesised relationship between engagement and occupational health was found to be *significant* (PLS path coefficient -.36), with zero not falling in the 95% confidence interval. However, according to the PLS path coefficient, the relationship is negative, which is in contradiction with existing literature on the relationship between engagement and occupational health (Bakker, Schaufeli, Leiter & Taris, 2008; Imamura et al., 2016).

It can still be concluded that employees of the SAPS experiencing engagement will also experience occupational health, but the effect in this study of engagement on occupational health seems to be negative. Thus, as SAPS employees experience engagement, it seems to result in lower levels of occupational health.

**Hypothesis 2:** Occupational health ($\eta_4$) has a significant positive effect on engagement ($\eta_3$) among SAPS employees.

The hypothesised relationship between occupational health and engagement was found to be *significant.* The PLS path coefficient was equal to -.2, with zero not falling in the 95% confidence interval. This is again contradictory to existing research on the relationship between occupational health and engagement (Bakker et al., 2008; Imamura et al., 2016). However, a significant relationship was still found, even though it seemed to be negative. It therefore can be concluded that employees of the SAPS experiencing occupational health will not necessarily experience increased engagement and that occupational health rather seems to have a negative effect on engagement levels.

**Hypothesis 3:** Job characteristics ($\eta_1$) have significant positive effects on engagement ($\eta_3$) among SAPS employees.

The hypothesised positive relationship between job characteristics and engagement was found to be *significant* in both PLS models. The PLS path coefficient was .36 for model 1 and .31 for model 2, with zero not falling in the 95% confidence interval. This

finding is in line with previous research conducted on the relationship between job characteristics, as job resource, and engagement (Bakker & Demerouti, 2014; Schaufeli, Taris & Van Rhenen, 2008). Thus, it can be concluded that SAPS employees' engagement levels will increase as their jobs comprise a richer variety of job characteristics.

**Hypothesis 4:** Calling ($\eta_2$) has a significant positive effect on engagement ($\eta_3$) among SAPS employees.

The hypothesised positive relationship between calling and engagement proved to be *significant*. The PLS path coefficient was .43 for model 1 and .35 for model 2, with zero not falling in the 95% confidence interval. This finding is in line with existing research on the relationship between calling, as personal resource, and engagement (Bakker & Demerouti, 2014; Garcia-Sierra, Fernandez-Castro & Martinez-Zaragoza, 2015). Therefore, it can be concluded that when employees of the SAPS have calling as personal resource, their engagement levels will increase.

**Hypothesis 5:** Job characteristics ($\eta_1$) have significant positive effects on calling ($\eta_2$) among SAPS employees.

The hypothesised positive relationship between job characteristics and calling was found to be *significant*. The PLS path coefficient for both models 1 and 2 was .3, with zero not falling in the 95% confidence interval. This is also supported by previous research findings on the relationship between job characteristics and calling (Bakker & Demerouti, 2014; Boonzaier et al., 2001). Thus, it can be concluded that since SAPS employees' jobs comprise an increasing variety of job characteristics, they will experience increased levels of calling.

**Hypothesis 6:** Calling ($\eta_2$) has a significant positive effect on job characteristics ($\eta_1$) among SAPS employees.

The hypothesised positive relationship between calling and job characteristics was found to be *significant*. The PLS path coefficient for both models 1 and 2 was .3, with zero not falling in the 95% confidence interval. This finding is in line with previous

research findings on the relationship between calling and job characteristics (Bakker & Demerouti, 2014; Boonzaier et al., 2001). Thus, it can be concluded that if employees of the SAPS experience calling, it will result in improved job characteristics.

**Hypothesis 7:** Job demands ($\xi_1$) have significant effects on occupational health ($\eta_4$) among SAPS employees.

The hypothesised relationship between job demands and occupational health was proven to be *significant*. The PLS path coefficient was calculated as .38 for model 1 and .37 for model 2, with zero not falling in the 95% confidence interval. This finding is also supported by previous research on the relationship between job demands and occupational health; however, it seems that this relationship between job demands and occupational health was found to be positive (Bakker & Demerouti, 2014). Thus, as employees of the SAPS experience increasingly demanding jobs, their occupational health will increase. The positive effect that job demands seem to have on the SAPS employees' occupational health can be due to sufficient job resources that are provided to these employees, thus serving as a buffer between job demands and occupational health.

#### 4.3.2.4 Evaluation and interpretation of the proposed moderating hypotheses

Two approaches were followed to test the significance of the *moderating* effects. Initially, the $R^2$ change test for interaction was utilised by using three variables (independent, moderator and dependent) to test whether the $R^2$ would increase significantly when the interaction between the independent and the moderator variables (independent*moderator) was included. In Table 4.7, the change in $R^2$ and the p-values are provided in order to evaluate whether moderating effects exist between the different paths. It is important to note that $p < .05$ is statistically significant at the 95% confidence level.

Secondly, path coefficients of interaction terms included in the PLS model were utilised to determine the strengths, significance and direction of the hypothesised moderating effects in the structural model. The significance of a hypothesised path depends on whether zero is present between the lower and upper bootstrapping values. The analysis was done using a 95% confidence interval, similar to what was

explained earlier. The data utilised to determine the relationships of hypotheses is presented in Table 4.8 and Table 4.9.

**Table 4.7**

***$R^2$ change and p-values for the moderating effects***

| Path | $R^2$ change | F - to remove | P-value |
|---|---|---|---|
| H8: JC*JD → OH | -.0285 | 13.5448 | .0003 |
| H9: C*JD → OH | -.0308 | 15.4860 | .0001 |
| H10: JD*JC → WE | -.0100 | 4.8530 | .0283 |
| H11: JD*C → WE | -.0142 | 7.4603 | .0066 |

JD = Job demands; JC = Job characteristics; OH = Occupational health; C = Calling; WE = Work engagement

**Table 4.8**

***Moderating path coefficients for PLS model 1***

| Path | Path coefficient | 95% confidence interval (lower) | 95% confidence interval (upper) | Description |
|---|---|---|---|---|
| H8: JC*JD → OH | -.062 | -.179 | .062 | Not significant |
| H9: C*JD → OH | -.056 | -.173 | .052 | Not significant |
| H10: JD*JC → WE | -.005 | -.110 | .162 | Not significant |
| H11: JD*C → WE | .066 | -.028 | .154 | Not significant |

JD = Job demands; JC = Job characteristics; OH = Occupational health; C = Calling; WE = Work engagement

**Table 4.9**

***Moderating path coefficients for PLS model 2***

| Path | Path coefficient | 95% confidence interval (lower) | 95% confidence interval (upper) | Description |
|---|---|---|---|---|
| H8: JC*JD → OH | -.060 | -.199 | .055 | Not significant |
| H9: C*JD → OH | -.080 | -.201 | .038 | Not significant |
| H10: JD*JC → WE | -.023 | -.119 | .084 | Not significant |
| H11: JD*C → WE | .041 | -.052 | .126 | Not significant |

JD = Job demands; JC = Job characteristics; OH = Occupational health; C = Calling; WE = Work engagement

**Hypothesis 8:** Job characteristics ($\eta_1$) have significant positive moderating effects on the relationship between job demands ($\xi_1$) and occupational health ($\eta_4$).

The p-value of job characteristics as a moderator of the relationship between job demands and occupational health was found to be lower than .05 (p = .0003). A p-value lower than .05 means that job characteristics have statistically significant moderating effects on the relationship between job demands and occupational health.

The nature of job characteristics as moderator in the relationship between job demands and occupational health was also captured in Figure 4.3. When job characteristics are low among SAPS employees, it seems that job demands (stress) have a more severe impact on the employees' occupational health. In contrast, if job characteristics are high among SAPS employees, the effects of job demands (stress) are far less severe on the occupational health of these employees. Therefore, it is clear that one would prefer job characteristics to be high among SAPS employees, seeing that these buffer the negative effect of job demands (stress) on occupational health.

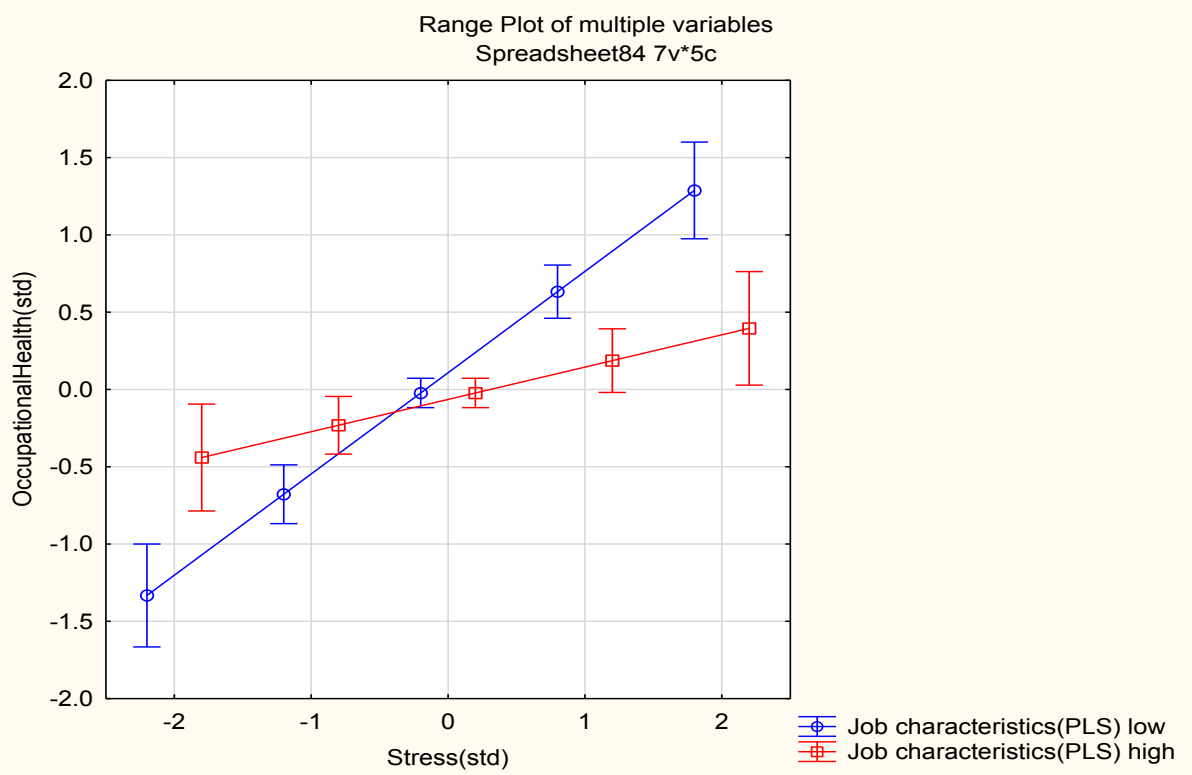


***Figure 4.3.*** **The moderating effect of job characteristics on the relationship between job demands (stress) and occupational health**

When this moderating effect of job characteristics on the relationship between job demands and occupational health was tested further in terms of PLS bootstrapping, however, the findings were contradictory to the abovementioned findings. Instead, it was found that the hypothesised moderating effect of job characteristics on the relationship between job demands and occupational health was *not statistically significant*. The PLS path coefficient was -.062 for model 1 and -.060 for model 2, with zero falling in the 95% confidence interval. The exact information on the confidence of the lower and upper intervals is provided in Table 4.8 and Table 4.9.

**Hypothesis 9:** Calling ($\eta_2$) has a significant positive moderating effect on the relationship between job demands ($\xi_1$) and occupational health ($\eta_4$).

The p-value of calling as a moderator of the relationship between job demands and occupational health was found to be lower than .05 (p = .0001). A p-value lower than

.05 means that calling has a statistically significant moderating effect on the relationship between job demands and occupational health.

The nature of calling as moderator in the relationship between job demands and occupational health was also captured in Figure 4.4. When calling is low among SAPS employees, it seems that job demands (stress) have more severe influences on the employees' occupational health. In contrast, if calling is high among SAPS employees, the effects of job demands (stress) are far less severe on the occupational health of these employees. Therefore, it is clear that one would prefer calling to be high among SAPS employees, seeing that it buffers the negative effect of job demands (stress) on occupational health.

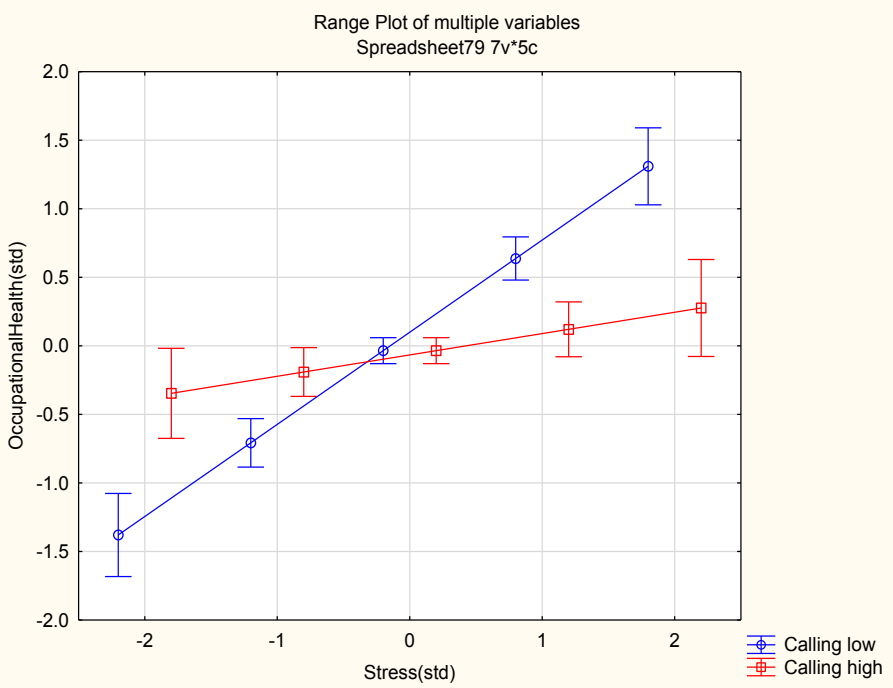


***Figure 4.4.*** **The moderating effect of calling on the relationship between job demands (stress) and occupational health**

When this moderating effect of calling on the relationship between job demands and occupational health was tested further in terms of PLS bootstrapping, the findings contradicted the abovementioned findings. Instead, it was found that the hypothesised moderating effect of calling on the relationship between job demands and occupational health was *not statistically significant*. The PLS path coefficient was -.056 for model 1 and -.080 for model 2, with zero falling in the 95% confidence

interval. The exact information on the confidence of the lower and upper intervals is provided in Table 4.8 and Table 4.9.

Hypotheses 8 and 9 were both found to contradict the findings of previous studies (Bakker, 2015; Bakker & Demerouti, 2014), which state that job resources and personal resources buffer the impact of job demands on strain (i.e. occupational health). Consequently, the relationship between job demands experienced in the SAPS and occupational health is not weaker for those employees enjoying a high degree of job resources (i.e. job characteristics) and who exhibit a high level of personal resources (i.e. calling). The first proposed interaction/moderating effect, as explained in Chapter 2, therefore seems not to have any impact on the relationship between job demands and occupational health.

There might be many reasons for these nonsignificant paths. The small sample size on which the study was conducted could potentially have influenced the results. Moreover, few, if any, studies were found on the *specific* variables included in this study and their moderating effects. Consequently, more research needs to be done on the specific job resources and personal resources and their buffering/moderating effect on the specific relationships mentioned in hypotheses 8 and 9.

**Hypothesis 10:** Job demands ($\xi_1$) have significant positive moderating effects on the relationship between job characteristics ($\eta_1$) and engagement ($\eta_3$).

The p-value of job demands as a moderator of the relationship between job characteristics and engagement was found to be lower than .05 ($p = .0283$). A p-value lower than .05 means that job demands have statistically significant moderating effects on the relationship between job characteristics and engagement.

The nature of job demands as moderator of the relationship between job characteristics and engagement was also captured in Figure 4.5. When job demands (stress) are low among SAPS employees, it seems that job characteristics have a weaker influence on their levels of engagement. In contrast, if job demands (stress) are high among SAPS employees, the effect of job characteristics is much stronger on

the levels of engagement of these employees. Therefore, it is clear that one would prefer job demands (stress) to be high among SAPS employees, seeing that it enhances the effects that job characteristics, as job resource, have on engagement, but only if sufficient job resources (i.e. job characteristics) are in fact provided.

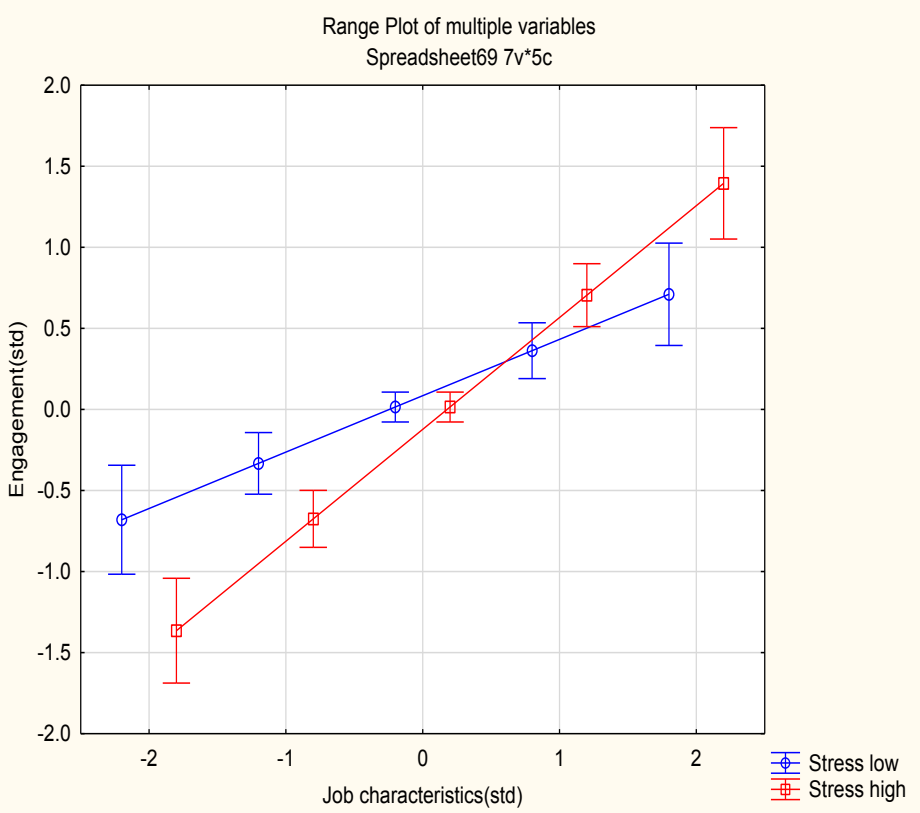


***Figure 4.5.*** **The moderating effect of job demands (stress) on the relationship between job characteristics and engagement**

When this moderating effect of job demands on the relationship between job characteristics and engagement was tested further in terms of PLS bootstrapping, the findings, however, were contradictory to the abovementioned findings. Instead, it was found that the hypothesised moderating effect of job demands on the relationship between job characteristics and engagement was *not statistically significant*. The PLS path coefficient was -.005 for model 1 and -.023 for model 2, with zero falling in the 95% confidence interval. The exact information on the confidence of the lower and upper intervals is provided in Table 4.8 and Table 4.9.

**Hypothesis 11:** Job demands ($\xi_1$) have significant positive moderating effects on

the relationship between calling ($\eta_2$) and engagement ($\eta_3$).

The p-value of job demands as a moderator of the relationship between calling and engagement was found to be lower than .05 (p = .0066). A p-value lower than .05 means that job demands have statistically significant moderating effects on the relationship between calling and engagement.

The nature of job demands as moderator in the relationship between calling and engagement was also captured in Figure 4.6. When job demands (stress) are low among SAPS employees, it seems that calling has a weaker influence on the employees' engagement levels. In contrast, if job demands (stress) are high among SAPS employees, the effect of calling is much stronger on their levels of engagement. Therefore, it is clear that one would prefer job demands (stress) to be high among SAPS employees, seeing that it enhances the effect that calling, as personal resource, has on engagement, but only if sufficient personal resources (i.e. calling) are in fact present.

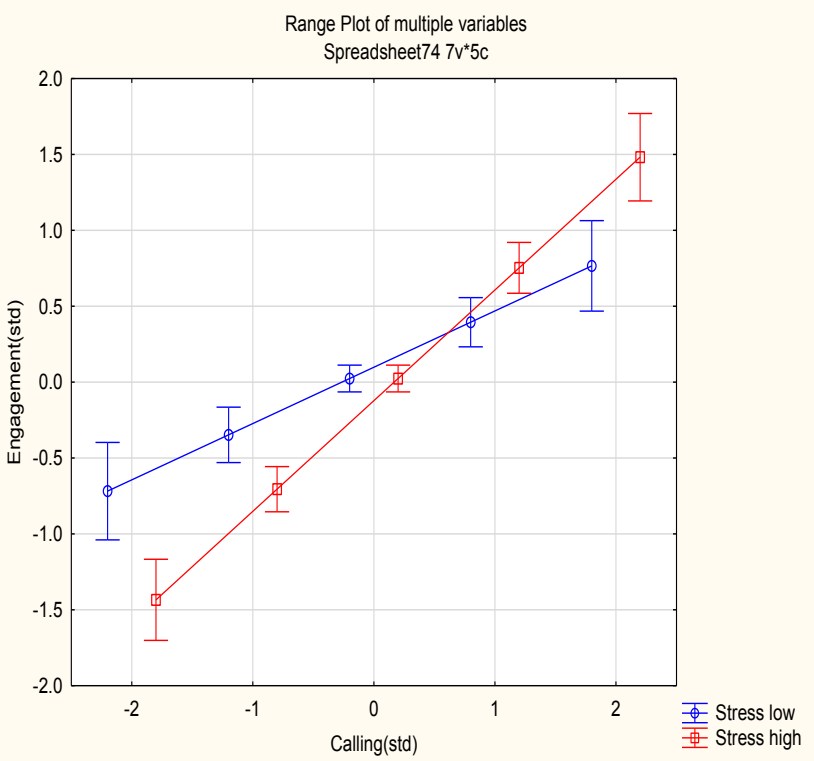


***Figure 4.6.*** **The moderating effect of job demands (stress) on the relationship between calling and engagement**

When this moderating effect of job demands on the relationship between calling and engagement was tested further in terms of PLS bootstrapping, the findings contradicted the abovementioned findings. Instead, it was found that the hypothesised moderating effect of job demands on the relationship between calling and engagement was *not statistically significant*. The PLS path coefficient was -.066 for model 1 and .041 for model 2, with zero falling in the 95% confidence interval. The exact information on the confidence of the lower and upper intervals is provided in Table 4.8 and Table 4.9.

Hypotheses 10 and 11 tested the second interaction effect, as explained in Chapter 2, in which job demands amplify the impact of job resources and personal resources on work engagement. These two hypotheses were also found to be in contrast to previous research findings (Bakker, 2015; Schaufeli et al., 2008). These research findings postulate that job resources and personal resources become salient and have the strongest positive influence on work engagement when job demands are high. However, this interaction effect was not proven to be significant in this study, seeing that all the hypotheses related to this interaction effect were found to be not significant. It thus is confirmed that as SAPS employees are confronted with challenging job demands, the existing job resources (i.e. job characteristics) and personal resources (i.e. calling) will not become valuable. Consequently, one can assume that the job demands experienced by the SAPS employees will not amplify the effect of job resources and personal resources on their levels of engagement.

There might be many reasons for these nonsignificant paths. The small sample size on which the study was conducted potentially could have influenced the results. Moreover, few, if any, studies were found to be conducted on the *specific* variables included in this study and their moderating effects. Consequently, more research needs to be conducted on the specific job demands and their moderating effects on the specific relationships mentioned in hypotheses 10 and 11.

## 4.4 CHAPTER SUMMARY

The purposes of this chapter were to report on and discuss the findings of this study. The measurement model was validated by conducting item analyses on each scale used as measurement in order to establish the reliability of the items included in the

questionnaires. PLS modelling was used to further investigate the reliability of the items of each scale used to measure the latent variables. Thereafter, the structural model was analysed to determine the quality of the relationships between the latent variables that were utilised in the survey. Lastly, the final scores and hypothesised relationships (of the main and moderating effects) were interpreted.

After the reliability of all the scales used in the study as well as all the items in each scale had been confirmed, the analysis continued. From the 11 hypotheses formulated in the study and illustrated in the conceptual model (Figure 2.2), seven were found to be significant. Hypotheses 8, 9, 10 and 11 were found to be not significant. Seeing that hypotheses 1 to 7 were found to be statistically significant, it can be concluded that support was found for the JD-R theory (Bakker & Demerouti, 2014), postulating that job demands are generally the most important predictors of occupational health, whereas job resources and personal resources are generally the most important predictors of work engagement.

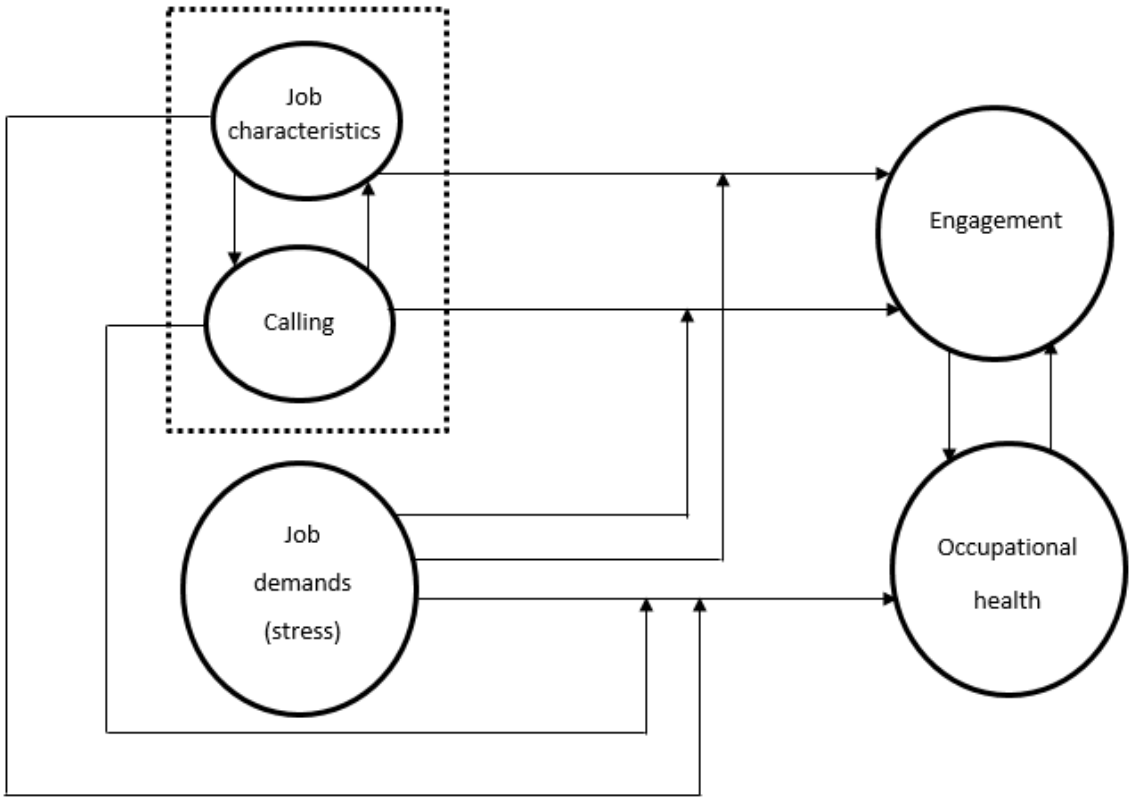


***Figure 2.2.*** **Conceptual model**

Chapter 5 outlines the managerial implications of the study in order to assist South African industrial psychologists, line managers and the SAPS to address problems highlighted by the research findings. The limitations of the study will be discussed, and the chapter will conclude with recommendations for future research endeavours.

# CHAPTER 5

# IMPLICATIONS AND LIMITATIONS OF THE STUDY, AND SUGGESTIONS FOR FUTURE RESEARCH

## 5.1 INTRODUCTION

Chapter 1 contextualised the study and also provided an overview of the research-initiating questions and the research objectives. Chapter 2 included an in-depth literature review of the relevant variables included in this study as well as the hypotheses derived from the literature. Chapter 3 explained the methodology, sample and statistical analyses that were used in the study. Chapter 4 discussed the results, participant scores and outcomes of the hypotheses.

This final chapter outlines managerial implications, based on the final scores obtained in the study, for South African industrial psychologists, line managers and the SAPS to assist them in addressing problems related to the research findings discussed in Chapter 4. The results will be extended to the basic JD-R theory, and the degree to which the findings of this study are in agreement with the theory is evaluated. Furthermore, the limitations of the study will be stated, and recommendations for future research endeavours will be provided.

## 5.2 REPORTING AND INTERPRETING THE FINAL SCORES

### 5.2.1 Interpreting the work engagement score

The Utrecht Work Engagement Scale (UWES-17) (Schaufeli & Bakker, 2003) was used to determine the extent to which employees of the SAPS were engaged in their work. The UWES-17 comprises three subscales, which served as a composite measurement indicator of employee engagement, although only total scores were used.

Schaufeli and Bakker (2003) advise that the true meaning of scores obtained for any version of the UWES can be interpreted using the scoring template presented in Table 5.1.

**Table 5.1**

***Scoring template for the UWES mean scores***

| Mean score | Mean |
|---|---|
| 1 – feels engaged once a year or less | 0.00 to 0.99 |
| 2 – feels engaged at least once a year | 1.00 to 1.99 |
| 3 – feels engaged at least once a month | 2.00 to 2.99 |
| 4 – feels engaged at least a couple of times a month | 3.00 to 3.99 |
| 5 – feels engaged at least once a week | 4.00 to 4.99 |
| 6 – feels engaged a couple of times per week or daily | 5.00 to 6.00 |

The total mean score obtained for employee engagement was 5.43 (SD = 1.27), which indicates a level of employee engagement of 6 among employees of the SAPS. This implies that employees experience feelings of engagement at least a couple of times per week or daily.

### 5.2.2 Interpreting the occupational health score

The General Health Questionnaire (GHQ-28) (Goldberg & Hillier, 1979) was used to determine the occupational health of SAPS employees. Responses were scored on a four-point Likert scale (1 = “not at all/better than usual”; 2 = “no more than usual/rather more than usual”; 3 = “rather more than usual/worse than usual”; and 4 = “much more than usual/much worse than usual”). Total scores that exceeded 4/5 out of 28 suggest probable distress (Chan, 2013).

The total mean score obtained for occupational health was 1.65 (SD = 0.56), which indicates that employees employed by the SAPS generally show a low probability of distress. This implies that a reasonable number of SAPS employees have satisfactory levels of occupational health (i.e. limited to no somatic symptoms and limited to no symptoms of anxiety and insomnia, social dysfunction and severe depression).

### 5.2.3 Interpreting the job characteristics score

The revised Job Diagnostic Survey (JDS) (Boonzaier et al., 2001) computes a score that reflects the overall motivating potential of a job. This score is calculated in terms

of the five job characteristics and provides a single indicator of the extent to which the five characteristics are present in a job. However, seeing that no interpretation of this score exists in the literature, mean scores were categorised as low (.00 to 2.33), medium (2.34 to 4.67) and high (4.68 to 7.01) in this study.

The total mean score obtained for job characteristics was 5.12 (SD = 1.27), which indicates that the jobs of employees of the SAPS comprise a high number of job characteristics. This implies that a reasonable number of SAPS employees' jobs show diverse job characteristics (i.e. skill variety, task significance, task identity, feedback and autonomy).

### 5.2.4 Interpreting the calling score

The literature does not provide any specific instructions regarding the interpretation of scores obtained by the 12-item calling scale (Dobrow & Tosti-Kharas, 2011). Therefore, mean scores were categorised as low (.00 to 2.33), medium (2.34 to 4.67) and high (4.68 to 7.01) in this study.

The total mean score obtained for calling was 5.01 (SD = 1.69), which indicates that employees of the SAPS have a high level of calling. This implies that a reasonable number of SAPS employees experience their work as a calling.

### 5.2.5 Interpreting the job demands score

The literature does not provide any specific instructions regarding the interpretation of scores obtained by the Police Stress Inventory (PSI) (Swanepoel & Pienaar, 2004). Therefore, mean scores were categorised as low (.00 to 26.02), medium (26.03 to 52.05) and high (52.06 to 78.08) in this study.

The total mean score obtained for job demands was 19.64 (SD = 18.39), which indicates that employees of the SAPS experience low levels of job demands (i.e. stress). This implies that a reasonable number of SAPS employees might have sufficient resources to do their job and/or experience limited police stressors and other job demands in their work environment.

Thus, it is evident that certain combinations of job resources (i.e. job characteristics in this study), calling as personal resource and job demands (i.e. stress in this study) have different influences on employee engagement and occupational health in the SAPS. The JD-R model (Bakker & Demerouti, 2014) distinctly explains the different interactions between job resources and demands and the associated outcomes.

Low job demands (i.e. stress) paired with low resources (i.e. job characteristics and calling) are likely to result in SAPS employees experiencing *apathy*, whereas high job demands (i.e. stress) associated with low resources (i.e. job characteristics and calling) will possibly result in *burnout*, while the opposite outcome will be *boredom*. Engagement therefore is the result of high job demands along with both high job and personal resources (Bakker, 2014). This aforementioned phenomenon that engagement is the result of high job demands if personal and job resources are also high is also related to other motivational theories, one of which is the motivational goal-setting theory of Latham and Locke (2006), which states that the more difficult the set goal is, the higher the motivation and related effort to attain the goal are. Consequently, as job demands (i.e. stress) increase among SAPS employees, these employees need to draw on their available job resources (i.e. job characteristics) and personal resources (i.e. calling) in order to deal effectively with and face the challenges set by the high job demands.

Calling as a personal resource has received relatively limited attention among research endeavours, especially as part of the JD-R model. Consequently, this study aimed to clarify and highlight the importance of calling as a personal resource among SAPS employees to buffer the effects of job demands and enhance engagement and occupational health in conjunction with job resources. The emphasis here is on the presence of a high-stress environment, which could motivate the employees of the SAPS to succeed in their jobs and which would be regarded as a challenge rather than a threat if employees have calling as a personal resource as well as sufficient access to job resources. Thus, it is essential that coping resources be made available for employees to successfully address demands. If this is not the case, challenges become threats and the strain resulting from the demands could develop into burnout and other occupational health issues. The employees' work engagement therefore is the product of high job demands (i.e. stress) associated with the availability of many

job resources (i.e. job characteristics) and the ability of employees to draw on their personal resources (i.e. calling) (Bakker, 2014).

The present study consequently emphasises an understanding of the importance of individual characteristics and how calling as a personal resource as well as the existence of job resources (i.e. job characteristics) can assist in dealing with high job demands (i.e. stress) within the SAPS. Knowledge of the functioning of calling as a personal resource and job resources (i.e. job characteristics) in the JD-R model will enable human resource managers to develop interventions that can foster the growth of these resources in the pursuit of optimising engagement and assisting SAPS employees to deal with the existing job demands. Employees of the SAPS will then be able to cope more effectively with the existing job demands. This, in turn, will result in increased work engagement and a decrease in the employees' level of potential or existing occupational health problems.

## 5.3 PRACTICAL IMPLICATIONS

Research, especially quantitative research that proves relationships between variables to be significant, is of much value for industrial psychologists and managers within the working environment. The PLS path analysis conducted in this study provided valuable information regarding the amount of variance accounted for by the total model. The results of the PLS path analyses show that the two PLS models accounted for an average variance of 50.45% in work engagement. Moreover, 45.7% of the variance in occupational health can be explained by the effect of exogenous variables in the two fitted PLS models. Therefore, it is clear that the developed model provides valuable findings for practical application within the workplace.

Work engagement and occupational health are individual and organisational outcomes of the interaction between the variables in the JD-R model, namely job resources (i.e. job characteristics), personal resources (i.e. calling) and job demands (i.e. stress) (Bakker & Demerouti, 2014). Therefore, it would be advantageous for organisations to focus managerial efforts and interventions on the latter variables with the aim to increase employees' occupational health and to foster work engagement. The interventions that were found to be most effective were those that combine specific measures at the organisational (i.e. interventions focusing on groups of

employees) and individual levels (i.e. interventions focusing on specific needs and problems of employees) (Bakker et al., 2014). Interventions at both of these levels are discussed, and the focus is specifically on increasing job resources (i.e. job characteristics), fostering calling as personal resource and reducing job demands (i.e. stress).

The discussion of the proposed interventions commences with general interventions that the SAPS, managers and industrial psychologists can use to address typical problems associated with the SAPS. Thereafter, specific interventions aimed at addressing the problems that emerged from the statistical results of the investigation of the SAPS sample in the present study are provided.

### 5.3.1 General interventions that can be employed by the SAPS

The SAPS is characterised by high-risk working environments that can cause stress and other occupational health problems among its employees. Therefore, it is essential that management focus on how the level of job stress and other occupational health issues experienced by employees can be reduced and also consider how staff members can be equipped to manage their job stress more effectively. To prevent stress and other occupational health problems among SAPS employees while also ensuring that they contribute to their work engagement, it is recommended that the SAPS manage job demands and attempt to improve the lack of organisational support (i.e. job resources) within the organisation. Appropriate coping skills (i.e. personal resources), discussed in more depth later in this chapter, comprise another important area of intervention that the SAPS could consider (Schaufeli & Taris, 2014).

Consequently, it is suggested that employers and management ensure that job resources (i.e. job characteristics) are continuously available to their employees and that their employees are equipped with personal resources (i.e. calling) through training sessions. In addition, employees should be provided with opportunities to perform work that requires thought and independent judgement. Generally, it has been found that when independence and freedom of choice are allowed in the performance of their tasks to a certain degree, employees will consider their work as meaningful (Sparr & Sonnentag, 2008). Allowing employees to participate in

appropriate decision making will enrich the employees' feelings of membership and will contribute to the meaningfulness component of sense of coherence.

Managers often underestimate the impact that good supervision, regular and valid feedback and supportive relationships can have on their employees. It is essential that managers be present in the employees' working environment on a regular basis. This will enable them to provide valid and regular feedback to their employees, and it is essential that this take place regularly. Arranging monthly feedback sessions during which positive and negative feedback are given to each employee will give rise to a workforce consistently attempting to improve its performance feedback each month (Sparr & Sonnentag, 2008). Furthermore, good supervision can be achieved by managers who are more visible in the workplace, and guidelines can be provided to assist managers to determine how to spend a certain amount of time visible to their employees.

The implementation of this suggested type of system should result in relevant feedback sessions during a manager's supervision of his/her employees. If employees perceive that their manager is alert while supervising, they will strive to be more productive (Sparr & Sonnentag, 2008).

Furthermore, concerning management, organisations also need to promote autonomy, which in turn will result in an increase in work engagement and a decrease in occupational health problems. Autonomy can be created or increased by providing employees with a variety of work schedule opportunities, such as flexible working hours, working from home and compressed workweeks (Lunenburg, 2011). It is recommended that one focuses on feedback and autonomy first, as this is the easiest method of increasing job resources, seeing that it is not necessary to change the nature of the job, as is the case with the other job resources (i.e. skill variety, task significance and task identity).

Another way of addressing high job demands (i.e. stress) and preventing occupational health problems is through coping strategies. Coping refers to strategies, both cognitive and behavioural, that individuals utilise in order to manage a stressful situation as well as the negative emotional reactions that accompany such a situation

(Klopper, 2003). Two major coping strategies have been identified in the literature: problem-focused coping (i.e. strategies focusing on addressing the stressor itself) and emotion-focused coping (i.e. efforts to deal with the emotional response to the stressor). A third strategy has also been mentioned; this includes a mixture of the first two strategies and is related to seeking social support (Klopper, 2003).

According to Klopper (2003), a coping instrument was developed that initially measured 14 coping strategies, which later were revised to fit the police environment. This instrument is known as the COPE instrument, and the revised version measures four coping strategies: active coping, avoidance, seeking emotional support and turning to religion (Klopper, 2003). Consequently, it is advised that the COPE instrument be used in the SAPS working environment to determine the type of coping strategies that the SAPS employees utilise to address stress. More specifically, it can be used in personnel selection procedures and in individual training on coping with stress.

The strategies involved in active coping are approaching the problem, redefining it into something positive or as a learning experience and accepting that it has happened. These coping strategies are associated with lower burnout. Avoidance coping, in contrast, includes daydreaming and ignoring the facts as strategies, and these are associated with an increase in exhaustion. Although emotion-focused strategies have often been determined to be ineffective, it seems that seeking emotional support can prevent exhaustion caused by job stress. It was also found that seeking emotional support leads to the use of active coping strategies, which in turn lead to increased levels of professional efficacy. Turning to religion as coping strategy has been mentioned occasionally in the literature but has largely been ignored in coping with occupational stress. Although some studies have found a relationship between turning to religion and burnout, no research has been conducted on this relationship in the SAPS (Klopper, 2003).

When successful coping strategies are implemented and followed, it will result in goal attainment, enhanced professional efficacy and a sense of existential significance. In contrast, poor coping strategies are likely to result in burnout. Thus, it can be concluded that high levels of burnout are associated with ineffective (e.g. withdrawal)

coping strategies and low degrees of burnout with constructive coping strategies. Research on coping specifically in the SAPS has determined that SAPS employees often seem to make use of maladaptive coping strategies (i.e. alcohol and drug abuse, anger and withdrawal). It has also been found that distancing and planful problem-solving coping strategies significantly reduce distress, whereas escape/avoidance and self-control coping do not seem to work in the police working environment (Klopper, 2003).

These interventions set out general and broad guidelines that the researcher could consider when addressing the specific interventions geared towards the problems within the SAPS sample.

### 5.3.2 Interventions based specifically on the results of the present study

This section entails a discussion on the interventions that will be practical and feasible for the SAPS offices and police stations that were studied in the Western Cape and Northern Cape. As Bakker and Demerouti (2014) state, occupational health and work engagement are not redundant concepts. Whereas job demands (i.e. stress) are the most important antecedents of occupational health problems, job and personal resources (i.e. job characteristics and calling) are the most important antecedents of work engagement. Moreover, whereas occupational health issues have negative impacts on employee well-being and organisational performance, work engagement is a desirable state with positive consequences.

Consequently, it seems necessary that interventions to be implemented in the SAPS offices and police stations be aimed at preventing occupational health issues and fostering work engagement. Bakker et al. (2014) furthermore state that the most effective interventions are those that combine specific measures on individual as well as organisational levels. These interventions can include the following: job redesign, job crafting, training and strengths-based interventions (Bakker & Demerouti, 2014). The intervention target and level of each intervention is specified in Figure 5.1.

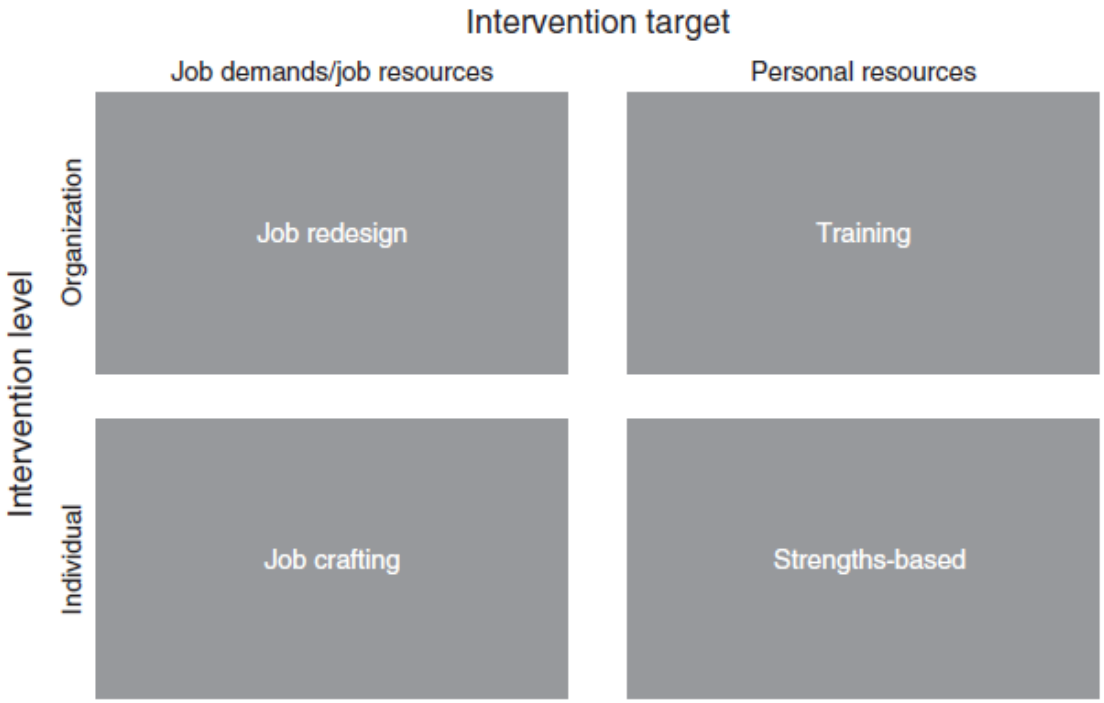


***Figure 5.1.*** **JD-R interventions** (Bakker & Demerouti, 2014, p. 18)

#### 5.3.2.1 Organisational-level interventions

It has already been mentioned that interventions at the organisational level focus on groups of employees (Bakker et al., 2014). These interventions include *training programmes* as well as *redesigning* the specific job within each department of the SAPS. Consistent with JD-R theory, possible interventions proposed specifically by the current study include the following: reducing job demands, fostering personal resources and increasing job resources within the SAPS.

##### 5.3.2.1.1 Reducing job demands (stress) through job redesign

The hypothesised relationship between job demands (i.e. stress) and occupational health was found to be statistically significant (PLS path coefficient for model 1 = .38 and for model 2 = .37). These research findings indicate a strong positive relationship between job demands (i.e. stress) and occupational health. Consequently, it is important to focus on job demands (i.e. stress) by implementing interventions in order to assist SAPS employees to address these hindrance demands even more effectively.

However, it is not possible to eliminate job demands (i.e. stress) that the employees need to deal with, as they always will be part of the SAPS working environment. Alternatively, it is suggested that interventions that will assist SAPS employees to cope more effectively with the job demands (i.e. stress) that they experience be introduced within the organisation. It has already been mentioned that coping strategies can be provided to SAPS employees as a way of coping with job demands. However, a more desirable strategy is to make their working environment inherently less stressful (i.e. reduce job demands such as being assigned excessive paperwork, working overtime, meeting deadlines and being assigned more responsibility) (Klopper, 2003). In line with these interventions, Bakker et al. (2014) claim that there are two processes that can be used to intervene and reduce job demands or increase job resources in order to reduce negative symptoms resulting from job demands. These interventions can be categorised broadly as job redesign and job crafting. Job crafting, however, is an individual-level intervention and will be discussed later in this chapter.

Job redesign is an intervention on the organisational level that aims to change employee well-being by utilising job demands and job resources. Bakker and Demerouti (2014) describe job design as the manner in which jobs, tasks and roles are structured, enacted and modified, and the impact of these structures, enactments and modifications on individual, group and organisational outcomes.

Job redesign is a top-down process in which organisations or managers change elements of job tasks, responsibilities, roles, conditions and so forth with the aim of optimising the demands-resources balance (Bakker et al., 2014). Examples of job redesign include increasing support and providing supervisory coaching and performance feedback (job resource), and assigning additional job responsibilities (challenging job demand) in order for employees of the SAPS to deal/cope more effectively with the job demands (i.e. stress). In each case, the structure and/or content of the job are redesigned. However, the second interaction/moderating results of the present study show that job demands would not amplify the impact of job resources and personal resources on work engagement. Therefore, assigning additional, challenging job responsibilities in order for SAPS employees to manage the existing job demands would not make much of a difference (Klopper, 2003).

Moreover, managers within each department in the SAPS could also conduct an organisational survey to determine which job resources and demands employees would prefer having addressed, with the aim of improving engagement and decreasing occupational health problems (Bakker & Demerouti, 2014). It is crucial to start the intervention with the assessment of the most important job demands and job resources that need attention (Bakker et al., 2014) within the SAPS environment. According to Schaufeli and Taris (2014), a JD-R-based online tool is currently used in the Netherlands to assess job demands, job resources, personal resources, psychological states as well as positive and negative outcomes. Consequently, the information provided by the online tool can be used to draft interventions at the personal, team and organisational level. Figure 5.2 illustrates an eight-step cyclical process, known as the JD-R monitor, in which the JD-R survey can be used as evidence-based organisational consultancy.

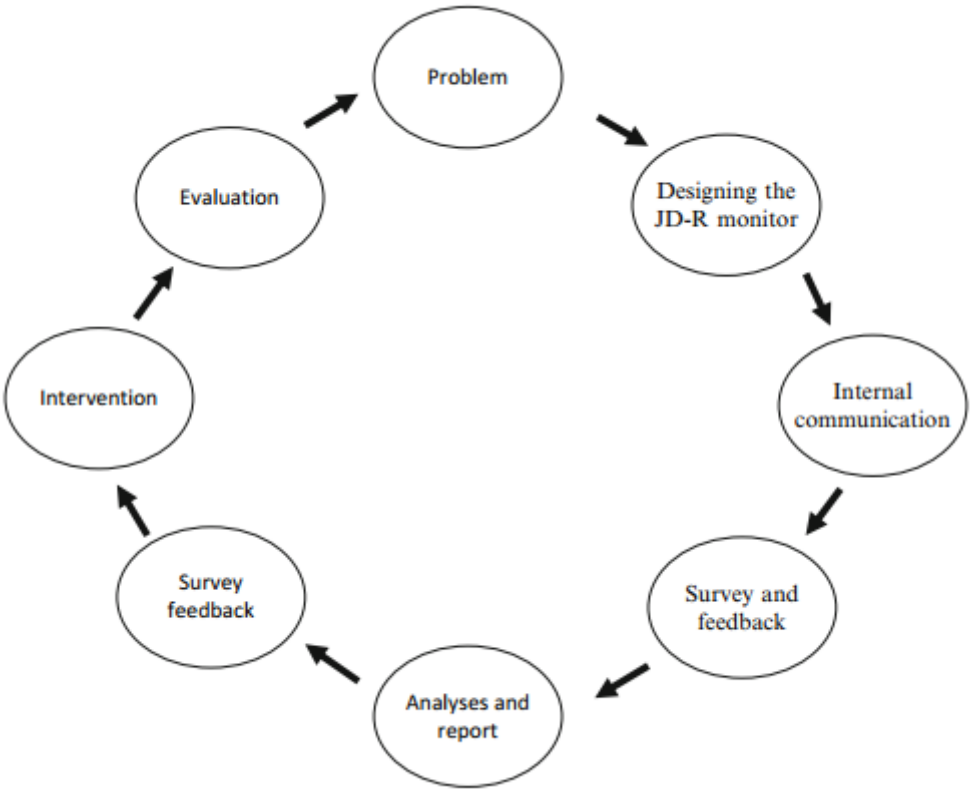


***Figure 5.2.*** **The process of using the JD-R survey** (Schaufeli & Taris, 2014, p. 61)

The process illustrated in Figure 5.2 commences with problem identification as the first step. In the second step, the JD-R monitor is designed together with key persons, such as human resource officers, management, work council members and occupational physicians, who select and include the most relevant job stressors, personal and job resources, stress reactions and outcomes in the JD-R monitor. An internal communication campaign, Step 3, is then launched, which usually includes a kick-off meeting with all employees being held, flyers being sent out and announcements being made via the company's intranet as well as the publishing of background articles in the company's magazines. The fundamental goal of the campaign is to emphasise the importance of the survey and to ensure the commitment of the various stakeholders (including top management and unions). Step 4 involves sending emails to all employees containing a link to the online JD-R monitor. It takes employees 15 to 30 minutes to complete the survey completely anonymously, and response rates usually range from 65% to 85%, depending on the effectiveness of the initial communication of the project. Immediately after completing the JD-R monitor, the employee receives an automatically generated feedback report, which compares the employee's scores with a benchmark score. Moreover, if an unfavourable score is the end result, the feedback text invites the employee to take action (e.g. if a score indicates a poor career perspective, a web link to the organisation's career counselling service is provided so that an appointment can be made) (Schaufeli & Taris, 2014).

The aim of Step 5 is to provide an in-depth analysis of possible antecedents and to make recommendations for improvements in terms of reducing job stress, stimulating work engagement and improving organisational outcomes. Feedback is then given to the organisation on all levels (Step 6), followed by the design of appropriate interventions based on the results (Step 7). These interventions can take two forms: individuals can take action themselves to improve their own personal and job resources and decrease their job demands, and team and organisational interventions can be implemented (i.e. training programmes, team building, job redesign or culture change). After the interventions have been implemented, the organisation can go through steps 1 to 7 again to evaluate whether the level of engagement and occupational health has increased (Step 8) (Schaufeli & Taris, 2014).

This tool can be very useful in the SAPS to increase work engagement and occupational health by redesigning jobs based on the evidence provided by the JD-R monitor. However, it is recommended that a South African version of this online tool be designed first, seeing that it has only been used in the Netherlands.

Another way of determining how the process of redesigning jobs should take place is the use of the revised JDS. This survey was designed to measure the five core job characteristics that are included as job resources in this study and to link them to specific outcomes. The JDS was originally presented as a useful tool for diagnosing and evaluating job redesign efforts (Weaver, 2008).

Furthermore, evidence exists that job enrichment interventions, aimed at addressing the five core job characteristics, will result in increased productivity, decreased employee stress and increased job satisfaction. According to Lunenburg (2011), the job characteristics model specifies five widely used interventions that can be used to enrich jobs in an organisation. These interventions are vertical loading (i.e. allowing employees to set work schedules, determine work methods, decide how and when to check the quality of work produced and when to take breaks, and seek solutions to problems on their own first), natural grouping (i.e. assigning an entire job to one person rather than having several employees work on separate parts of one job), formation of natural teams, opening feedback channels and establishing client relationships (Lunenburg, 2011).

Another category of interventions that could be useful to the SAPS are motivationally based productivity interventions, such as the Productivity Measurement and Enhancement System (ProMES) (Weaver, 2008). ProMES is an intervention based on feedback. Consequently, it will enable employees to receive quality feedback regarding their performance once the intervention is implemented. Applications such as ProMES Navigator (an online application that allows for real-time performance measurement) make it easy for employees to track their individual or team performance against performance benchmarks while actually performing tasks. ProMES could also foster autonomy, since it relies on performance measures that are under the employee's control. ProMES also fosters autonomy by using feedback meetings during which teams work together to develop improvement strategies and

evaluate their effectiveness. Task significance, for example, could be enhanced by the development of contingencies for each performance indicator. Furthermore, skill variety could also be increased after the most effective process and explicit task strategies have been outlined, as employees would realise that new skills are needed to do the job (Weaver, 2008).

#### 5.3.2.1.2 Increasing job resources (job characteristics) through training

Job resources such as social support and performance feedback can be optimised not only by redesigning the work environment but also through providing training (Bakker et al., 2014). The hypothesised positive relationship between job characteristics and work engagement was found to be statistically significant (PLS path coefficient for model 1 = .36 and for model 2 = .31). This research finding provides evidence of a strong positive relationship between job characteristics and work engagement, and indicates the importance of exploring ways of improving the characteristics of SAPS employees' jobs.

The process illustrated in Figure 5.2 can also be utilised to determine the shortcomings of job resources in the SAPS, after which training programmes to address these shortcomings can be implemented. However, if an online version of the JD-R survey is not possible, a tailored survey can be designed based on interview results (i.e. the level of job resources, personal resources and job demands identified by employees) (Bakker & Demerouti, 2007).

It is also possible for management to participate in JD-R workshops before commencing with the process illustrated in Figure 5.2. This will ensure that managers know how the information that will become available during the JD-R monitor process should be used. Consequently, it will also be possible to design tailor-made interventions aimed at increasing job resources, fostering personal resources and decreasing job demands among SAPS employees. Managers could also be sent on training courses that illustrate how job resources can be increased through the provision of job characteristics (i.e. task significance, task identity, skill variety, feedback and autonomy) (Bakker, Demerouti & Verbeke, 2004).

Moreover, individual employees can also take the online JD-R survey (or the pen-and-paper version) to determine the job resources that are currently provided as well as shortcomings in the provision thereof (Bakker, Demerouti & Schaufeli, 2003). Managers could then use this information to determine where the shortcomings are in each department of the SAPS and consequently aim to ameliorate these shortcomings through training and job redesign (already discussed earlier). Managers can then undergo training, for example in providing sufficient feedback on a regular basis and creating autonomy among their employees.

#### 5.3.2.1.3 Fostering personal resources (calling) through training

The hypothesised positive relationship between employees' calling and job characteristics was found to be statistically significant (PLS path coefficient for model 1 = .3 and for model 2 = .3), as was the hypothesised positive relationship between job characteristics and work engagement (PLS path coefficient for model 1 = .36 and for model 2 = .31). These findings indicate the importance of exploring the development of employees' calling through training interventions.

Training interventions should be aimed at the organisational level with the purpose of developing personal resources. Training and development are among the cornerstones of human resource management functions. In the South African context, organisations that meet specific requirements should invest sufficiently in the training and development of their employees and also be able to prove that they have done so. Fundamentally, training is aimed at developing employees' skills, knowledge and problem-solving abilities. Bakker et al. (2014) believe that training could also be targeted at developing employees' personal resources.

To identify a unique sense of calling, some researchers recommend that self-reflection and self-exploration be used that will assist an individual in discovering authentic personal interests, values and work preferences. Other research endeavours suggest that individuals should intentionally craft a meaningful and purposeful future either by assessing the importance of the summons or by focusing on meaning-making in the absence of a summons. Consequently, it is suggested that an intervention on calling in the SAPS include the following topics: meaning and purpose, values, authenticity, prosocial orientation and personal reflection. The main aim of this intervention would

be to assist participants in designing a personalised global action plan and strategies so that they can increase their level of calling at work. This intervention should take the form of career coaching, in which employees are guided through the process and assisted as far as possible (Wu-Pong, 2014).

#### 5.3.2.2 Individual-level interventions

Bakker et al. (2014) state that through individual approaches, organisations can attend to the specific needs and problems that employees may have. These needs and problems could include the following: individual employees facing hindrance demands due to certain life events or individual employees lacking certain job or personal resources because of changes in the organisation or in their personal lives.

Organisations could use internet versions of JD-R questionnaires with tailored feedback to inform employees about their most important job demands and resources, which has already been mentioned and discussed (Bakker et al., 2003). This information could be the starting point of a change process that is guided by a personal coach. Other possible interventions include *job crafting training*, in which employees learn how to proactively change their own work environment, *strengths-based training*, in which employees learn to set personal goals and use their strengths at work in new ways, and *recovery training*, in which employees learn which activities best help them to recover from their work-related efforts. Recovery training might also include relaxation techniques or mindfulness. Consistent with JD-R theory, possible interventions proposed specifically for the current study are aimed at fostering personal resources and job resources.

##### 5.3.2.2.1 Fostering personal resources (calling) through strengths-based approaches

Research has shown that personal resources such as optimism, resilience and self-efficacy can be taught (Bakker et al., 2003). Thus, when an organisational assessment indicates that large groups of employees lack important personal resources, organisations may decide to arrange on-the-job-training. In this training, examples of how personal resources can be developed are provided, and employees

acquire new competencies that can assist them in executing their daily job tasks (Wu-Pong, 2014).

Strengths-based interventions take place on an individual level and are also aimed at developing the personal resources of employees (Bakker et al., 2014). Individual strengths can be defined as positive traits that are reflected in feelings, thoughts and behaviours (Bakker et al., 2014). In comparison to personal resources training on an organisational level, strengths-based interventions include a more personalised coaching format that usually occurs between either a manager and a subordinate or a coach and an employee. This one-on-one approach takes an individual on a development journey and commences with an individual identifying his/her individual strengths. The individual is then guided in a particular time frame to explore different ways in which his/her strengths can be developed and applied within the work environment (Bakker et al., 2014). This type of intervention is aimed at personal development within the individual while simultaneously fostering engagement with his/her work.

An intervention that focuses specifically on individual strengths is positive psychotherapy (PPT). This therapeutic approach is based on the premise that psychology should focus not only on weaknesses but also on the strengths of clients. During PPT the client's positive emotions, character strengths, sense of meaning, positive relationships and intrinsically motivated accomplishments are systematically enhanced. The foundation of PPT can be found in Seligman's (2008) conceptualisation of happiness and well-being, in which happiness and well-being are sorted into five scientifically manageable and measurable components: positive emotion, engagement, relationships, meaning and accomplishments (Rashid, 2014).

PPT can be divided into three phases. The first phase focuses on exploring a balanced narrative of the client, while also attempting to identify his/her signature strengths from multiple perspectives. These signature strengths are then operationalised into goals that are personal and meaningful to the client. The second phase concerns cultivating positive emotions and assisting the client to deal with negative memories adaptively. The final phase includes exercises in fostering positive relationships as well as meaning and purpose (Rashid, 2014).

This intervention can also be useful in the SAPS to foster calling among employees. The SAPS could either insource a registered psychologist who is able to practise PPT or refer employees who have indicated the need to develop calling as a personal resource to a suitable psychologist.

#### 5.3.2.2.2 Fostering job resources (job characteristics) through job crafting

Job-crafting interventions, in contrast to traditional job redesign, are situated on the individual level and are initiated by the employees themselves. Such interventions involve employees choosing to proactively change their job resources, job demands and work environment (Bakker et al., 2014). Job crafting is the process through which employees actively change the way in which their jobs are designed by choosing tasks, negotiating different and more preferred job content and assigning more meaning to the jobs or tasks that they do (Demerouti & Bakker, 2011). Ideally, organisations should stimulate job-crafting behaviour. The SAPS offices and police stations on which the focus was in this study could be proactive and demonstrate to their employees the possibilities of crafting certain aspects of their job.

Applied correctly, job crafting will be beneficial to both the SAPS as well as the individual employees. It is therefore essential that the SAPS educate its employees on how they can craft their jobs.

Firstly, managers can arrange workshops that include exercises demonstrating how job crafting works and what exactly it entails. Employees of the SAPS would then be granted the opportunity to practise these behaviours during the workshop (Watkins & Leigh, 2010). Secondly, managers can assist employees to develop their own personalised crafting plan. This personalised crafting plan can be used to set job-crafting goals, and managers can conceptualise these as a coaching process through which they can track employees' progress and offer feedback and suggestions. This process of goal setting and practising would take place over a period of numerous weeks. These crafting goals set by the SAPS employees would focus specifically on increasing job resources, increasing challenging job demands and decreasing troublesome job demands (Demerouti & Bakker, 2011). Lastly, managers could organise reflective meetings in which employees can discuss successes, challenges

and problems related to their personalised crafting plan. This type of process will inform not only employees but also the managers of each department of how job-crafting behaviours can be applied within their managerial roles.

It is also recommended that managers recognise and reward exceptional job-crafting behaviour to stimulate crafting in the SAPS. Furthermore, especially during performance appraisal discussions, managers should take reasonable actions to monitor the ability of SAPS employees to deal with demands to ensure that their work remains meaningful and challenging instead of becoming overwhelming.

## 5.4 LIMITATIONS OF THE STUDY AND RECOMMENDATIONS FOR FUTURE RESEARCH

Despite the contributions that it has made, this study has several limitations. However, it is of the utmost importance to mention at this point that these limitations do not significantly undermine the results discussed in Chapter 4. These limitations rather provide guidelines for aspects on which future research endeavours can improve.

The first limitation is that although the sample of 339 SAPS employees was satisfactory, a larger sample size would have made the results and the study more credible. Due to the nature of the SAPS environment (very demanding work with unpredictable crisis situations daily), it was taken into account that it probably was difficult for the respondents to find time to complete the questionnaire. Another factor that may have contributed to the small sample size is that most of the questionnaires needed to be completed using the pen-and-paper method, which is also very time-consuming. The limited size of the sample may cause some concern when referring to generalisability as well as to the validity of the inferences made about SAPS employees as a population. The sample size and the complexity of the structural model also limit the use of LISREL to test the structural model. In addition, a possible explanation for the absence of significant relationships between the various constructs that proved to have significant relationships in some other studies could be due to the small sample size. Therefore, it is recommended that future studies attempt to procure a larger sample from a variety of SAPS offices and police stations.

The second limitation is seeing that this study focused on only two provinces – the Western Cape and the Northern Cape – the results cannot be generalised to the

larger population. A stratified random sample from a number of SAPS offices and police stations across South Africa that is more representative and can be generalised should be used in future studies. It would also be worthwhile to test the model used in this study on different government industries, for example traffic departments, health departments and educational departments rather than only on SAPS employees.

The third limitation is that the study relied mostly on self-report data that was collected by means of a paper-copy questionnaire. Unfortunately, method bias (i.e. impression management) is a weakness associated with self-report questionnaires, seeing that participants are able, to some extent, to respond in a way that would create a more positive and favourable impression of themselves. Correspondingly, the exclusive use of self-report questionnaires can artificially inflate the correlations between predictors (Podsakoff, MacKenzie, Podsakoff & Lee, 2003). Consequently, it is advised that future researchers consider using objective measures for latent variables. However, objective measures have other disadvantages, such as observational and egocentric bias, which could influence the validity and reliability of the measures.

The fourth limitation involves the confidentiality aspect of the self-administered web-based and the pen-and-paper questionnaires. Even though individual participants were assured of confidentiality, it is possible that they mistrusted the confidentiality clause in the informed consent document. As a result, this could have had a negative impact on the authenticity of their responses.

The fifth limitation is that although most of the reported PLS path analysis R-square values were satisfactorily high (ranging from .089 to .498 for model 1 and .089 to .551 for model 2), it is plausible that there are important predictors of work engagement and occupational health that were not included in this research study. These variables might yield more statistically significant results. There are many other factors potentially influencing the endogenous variables included in the study, such as environmental and personal factors. To overcome this limitation of the study, future endeavours could explore the possibility of including other variables in the JD-R model that make theoretical sense in explaining work engagement and occupational health. The model used in the present study therefore could be expanded in future studies. Although the scales used in this study showed good reliability, further development

and validation of the scales measuring the constructs related to this study could be considered within a South African context.

The sixth limitation is that the questionnaire was provided only in English, which is not the home language of most of the participants in this study. This could have resulted in employees not understanding some of the words used in the questionnaire, especially words such as ‘immersed’ and ‘resilient’ in the UWES-17. Certain items were also confusing in the way in which they were stated, which could have had an influence on the overall results of the study.

The seventh limitation of this study is associated with the use of an *ex post facto* research design. As was mentioned in Chapter 3, this design does not allow the researcher to influence the independent variables and consequently the researcher was not able to randomise the participants. Although the objectives of a study dictate the research design, future researchers could attempt to use an alternative design that is based on randomisation.

The eight limitation is that a ‘snapshot’ of the studied phenomenon was taken in this study (cross-sectional research study), which prevented the researcher from drawing causal conclusions (Taris & Kompier, 2006). To enhance the accuracy and consistency of the reported research findings, it is recommended that a longitudinal study be conducted in future research endeavours with multiple time waves or a diary design. Not only would this enable the researcher to draw more definitive causal conclusions, but it would also be possible to identify recurring behavioural patterns among employees employed by the SAPS as well as changes over time.

## 5.5 CHAPTER SUMMARY

This chapter provided potential managerial interventions to address the problems that became evident from the results discussed in Chapter 4. The recommended interventions consist of a combination of specific measures on individual as well as organisational levels. The limitations of the study were elaborated on, and recommendations for future research were provided.

## 5.6 CONCLUSION

Generally, the primary objectives of this study were to test the comprehensive calling structural model of the proposed relationships between the constructs and to determine the level of job demands (i.e. stress), job resources (i.e. job characteristics), personal resources (i.e. calling), work engagement and occupational health of a sample of SAPS employees. Moreover, the researcher aimed to highlight the results and managerial implications of the research findings and to recommend practical interventions for the SAPS employees who participated that could increase/decrease the respective constructs with the aim to increase their work engagement and occupational health. Reflecting on the objectives, the researcher concludes that all of the research objectives of this study were met.

The research-initiating questions asked:

a. How has calling been defined and measured in the workplace?
b. How does calling network with other variables to influence engagement and occupational health in the workplace?
c. What is the effect of calling on engagement and occupational health in the workplace?

From the 11 hypotheses formulated in the study, seven were found to be significant. The four nonsignificant hypotheses were related to the moderating effects. These nonsignificant paths might arise for many reasons. The small sample size on which the study was conducted potentially could have influenced the results. Moreover, few, if any, studies were found to have been conducted on the *specific* variables and their moderating effects. Consequently, more research is needed on the moderating effects of the specific job resources, personal resources and job demands.

Hypotheses 1, 2, 3, 4, 5, 6 and 7 were all found to be statistically significant and therefore supported JD-R theory (Bakker & Demerouti, 2014). This implies that the participating (and other) SAPS offices and police stations need to implement interventions in order to cope with the high job demands present in their environment and that management should take cognisance of the functioning of the personal resources (i.e. calling) and job resources (i.e. job characteristics) explored in the study. This will enable management to develop interventions that can foster the

enhancement of these resources in an attempt to optimise engagement and manage the existing job demands.

This study has made a contribution to JD-R theory by testing the JD-R model in its entirety and by exploring additional paths in the model. The particular inclusion of calling as personal resource is one of the most valuable contributions of this study, seeing that limited research has been published on the effect of calling on engagement and occupational health. Furthermore, the study has also contributed to a more comprehensive understanding of job characteristics as job resource, calling as personal resource as well as job demands (i.e. stress) and the impact of these variables on engagement and occupational health among the SAPS in the Western Cape and the Northern Cape of South Africa. The reported research findings illustrate the impact that job demands (i.e. stress), job resources (i.e. job characteristics) and personal resources (i.e. calling) have on work engagement and occupational health. Moreover, these findings provide insight into how industrial psychologists, managers and the SAPS could address problems related to the variables included in the study.

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